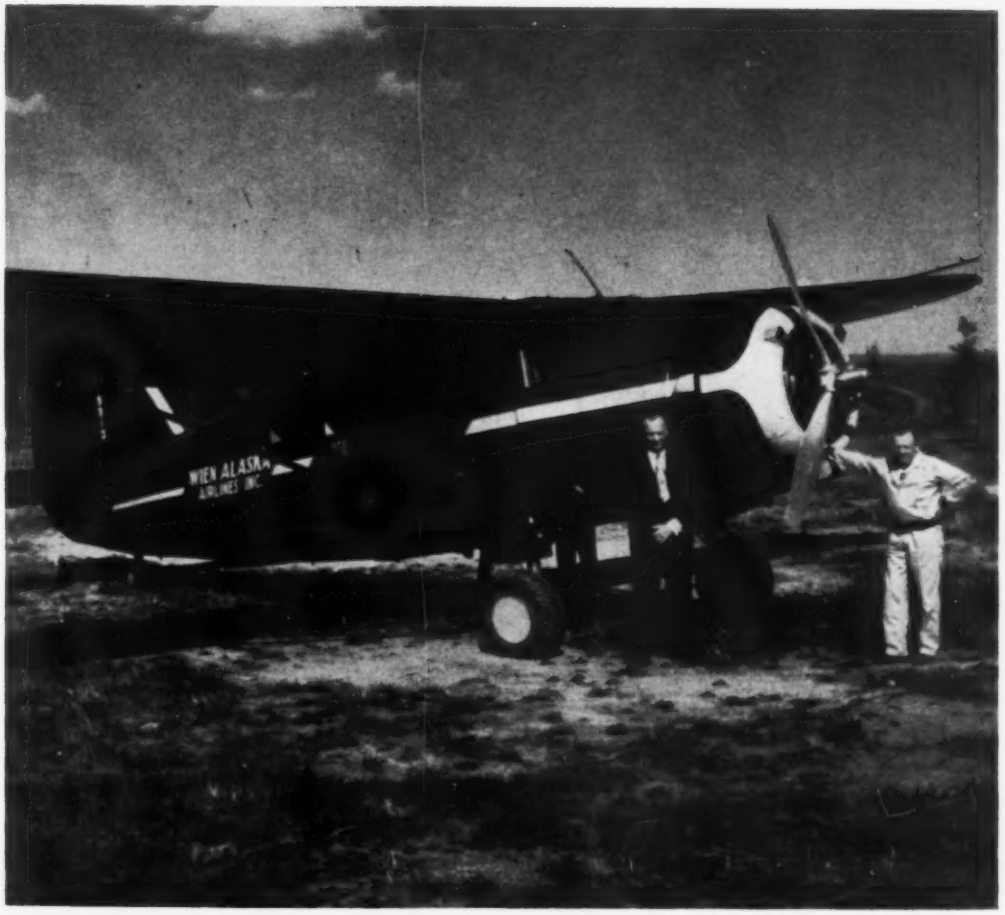
MARCH 24, 1956
VOL. 150 — No. 12

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



ALASKA "BUSH PHONES"

Ray Blain (left), *TELEPHONY* Technical Editor, is shown by plane in which he traveled from Fairbanks to Ft. Yukon to inspect Alaskan communications. See his article on service rendered by Alaska's "Bush Phones" on page 20.

Guaranteed Circulation This Issue
10,681 of Which 10,342 is Paid

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING

XUM

How much does it cost

The case of the relay that refused to die

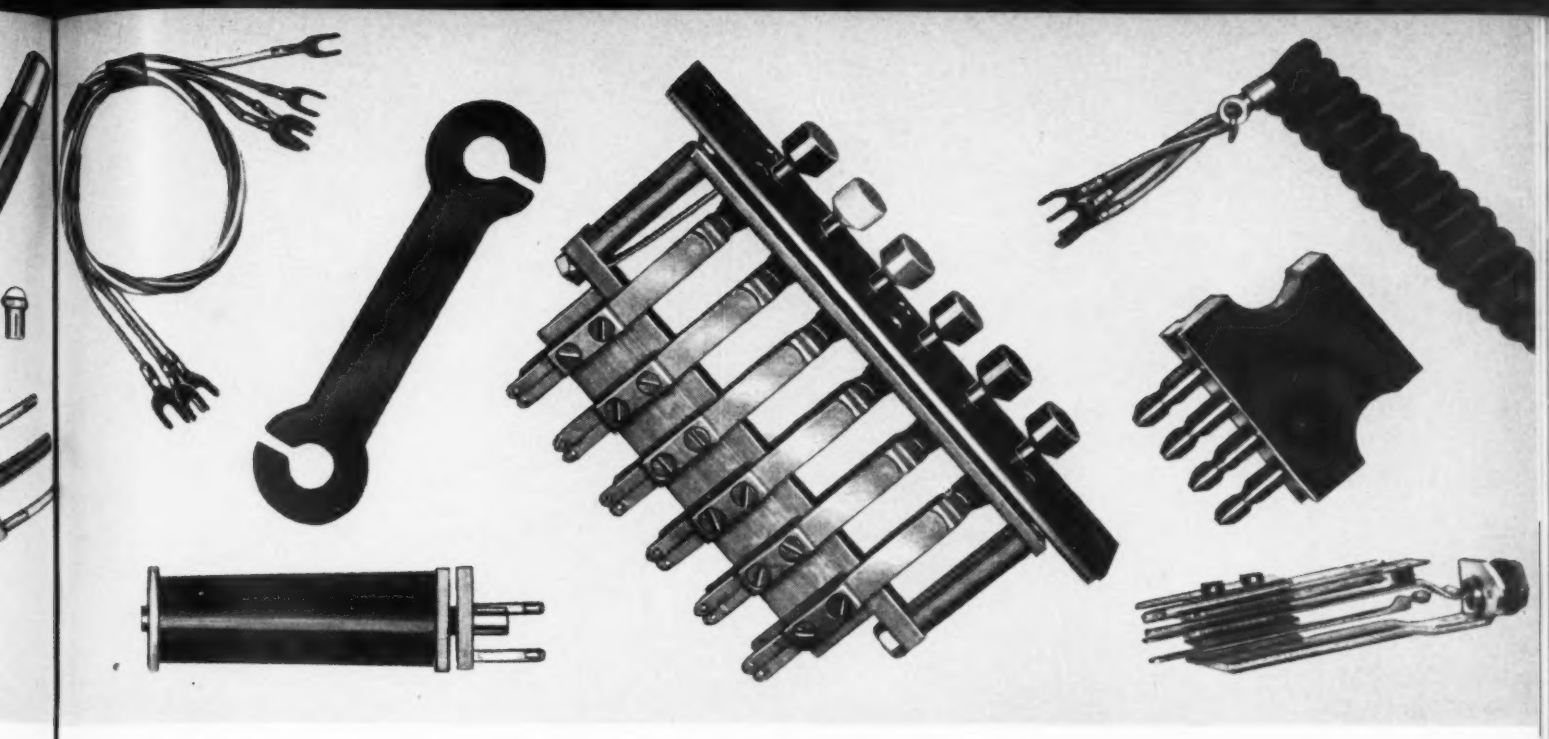
One example of the exhaustive testing a Stromberg-Carlson part goes through to assure reliable operation is the "Life Test."

Engineers Gilbert Dole (left), and Donald Jamieson are taking contact pressure readings on several sample "A" type relays. During this life test, relays went through 20,719,000 operations—and were still not worn out!

Several Stromberg-Carlson features make these relays so dependable they cut down your maintenance costs: twin contacts (2200% more reliable than ordinary single contacts), card-operated spring assemblies, preformed springs, and an improved method of adjusting the armature travel. Before leaving our factory each relay is adjusted, and inspected twice.

You get this same care and precision in the following Stromberg-Carlson parts:

Apparatus blanks
Coils
Condensers
Cords
Designation strips
Dials
Dial mountings
Drops
Extension bells
Fuses
Gongs
Hand generators
Hookswitches and hooks
Jacks
Keys
Key boxes
Lamps—switchboard
Lamp caps
Lamp sockets
Operators' telephone sets
Plugs
Receivers
Relays and relay coils
Ringers
Terminal equipment
Tools, switchboard and telephone
Transmitters
Visual signals



...you to save pennies when you buy parts?

At today's wages, a 20-minute repair job can double the cost of the "bargain" parts you buy.

This way, a penny saved is hardly a penny earned—it's time, money and good will down the drain.

Your best protection against this sort of waste is to make sure you buy the best-engineered and ruggedest-built parts. Then, instead of pinching a few pennies, you'll be saving maintenance dollars.

Sections F and G (Equipment) of the Stromberg-Carlson Catalog bring you complete details on the most reliable parts and components you can buy. If you don't have our catalog, call or write your nearest Stromberg-Carlson office and we'll gladly send one.

Precision, quality materials, and before-delivery testing go into each Stromberg-Carlson part. Take advantage of our experience to cut down *your* maintenance costs.

STROMBERG-CARLSON COMPANY

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3.

XUM

meet your company's top representative

PENTA preserves poles' attractiveness and protects their soundness, too

Hundreds of people meet your poles every day. Hundreds of impressions, good or bad, result. One thing for sure: they'll be *good* if you're using PENTA-treated poles.

PENTA* preservative treatment leaves poles clean and naturally attractive. They meet the strictest civic requirements, and win community appreciation of your system's interest in sound public relations. These strong, protected poles are direct evidence of your interest in sound operations, too. PENTA resists rot and termites years longer. This means less service trouble and expense for you, less inconvenience for your customers. Service records, available on request, verify the outstanding protection you get with PENTA.

Here's why your maintenance people are so "high" on PENTA treatment: this uniform, single-compound preservative gives a running check on pole life expectancy. When you simply measure the amount of PENTA present in the pole at any given time, you're measuring the amount of protection, too.

Yet clean, better-protected PENTA-treated poles cost no more than equipment treated in less completely satisfactory fashion. You'll have no trouble getting them promptly, either . . . over 100 suppliers all around the country treat poles and crossarms protected with effective *PENTAchlorophenol. For more information, please write to THE DOW CHEMICAL COMPANY, Dept. PE980C, Midland, Michigan.

you can depend on DOW CHEMICALS

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IRRADIATED for top performance!

*Irrathene® irradiated polyethylene film, a General Electric product.

NEW . . . IMPROVED

SUPERIOR TELEPHONE CABLE

contains a polyethylene tape* developed by radiation chemistry!

TOP PERFORMANCE because the dielectric strength is doubled . . . greater lightning protection!

TOP PERFORMANCE because the capacitance of every pair of conductors is practically uniform . . . simpler and quicker to splice!

TOP PERFORMANCE because the insulation is "graded" to conductor sizes and conforms to REA Spec. PE14 . . . closely matches the universal transmission standards for loading coils and terminating equipment!

And because SUPERIOR CABLE contains a tape marked at one foot intervals up to 10,000 feet, you are sure of the footage you receive and can measure the footage you use!

NEW, IMPROVED all-plastic SUPERIOR CABLE has resulted from recent developments in manufacturing techniques and better polyethylene compounds coupled with Superior's outstanding technological capacity. For Top Performance at less cost . . . order SUPERIOR CABLE today!

"Super-Splice"

Make splices MOISTUREPROOF, WATERPROOF . . . from inside out!

New Superior "Super-Splice" makes the splice permanently as good as the cable. Write for details.

For detailed information and prices, write

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION,
HICKORY, NORTH CAROLINA

if you want dial . . .

it's **KELLOGG** for

THE MOST COMPLETE L

CROSSBAR

Crossbar switching allows you maximum expansion . . . requires practically no routine maintenance . . . gives you high traffic capacity . . . has convenient drawer mounted switches which are easily accessible . . . allows PBX grouping service . . . is adaptable to inter-toll dialing.

STEP-BY-STEP

Step - by - Step switching gives you long life and low cost operation . . . is expandable for increased station and traffic requirements, allows trunking flexibility . . . is easy to check and adjust (each switch is a separate unit) . . . is compact and space-saving.

RELAYMATIC

Relaymatic all-relay switching is simple to install and easy to maintain . . . . operates with any type of trunk line . . . allows you up to 10 party selective divided ringing . . . has adaptors available for grounded rural lines.

XUM

E LINE IN THE WORLD !

Your Kellogg representative is well qualified to help you choose the dial system that best fits your needs . . . only Kellogg offers a complete line of dial equipment to the independent telephone company.

For more detailed information on any of these systems ask your Kellogg representative.

7-A2 ROTARY

Rotary switching gives you the advantages of motor driven, register-type system . . . allows large trunk groups and is adaptable to inter-toll dialing.

PABX'S

For PABX's you have your choice of several types of switching: cross-bar . . . step-by-step . . . or relaymatic . . . in all sizes.

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ESCO RINGING EQUIPMENT

MEMBER

ADDITIONAL ESCO FEATURES (details in future ads pictured on the dial) — further explain why Esco components are included in installations of prominent suppliers like Automatic Electric Co., Federal Telephone and Radio Corp., Kellogg Switchboard and Supply Co., Leich Sales Corp., and Stromberg-Carlson Co.

UNIQUE INTERRUPTER DESIGN

. . . with the features that operating engineers want most!

You can expect more than ordinary performance from Esco interrupters for a number of exclusive design reasons. First, Esco interrupters are designed to allow more cams and circuits with a single set of driving gears. But these unique interrupters are also more accessible. Pile-up are mounted at an angle in relation to the base. This inovation gives wider clearance for easier, surer inspection of contacts, terminals and wiring.

For longer life and lower up-keep, Esco interrupters are equipped with nylon cams, followers and actuators. This material, with its excellent wearing qualities, has an outstanding record in these applications. Another point — cams are secured to the shaft with a set screw and a key. This extra feature assures permanent positioning and accurate timing.

Practical features like these are only some of the reasons why Esco Ringing Equipment is preferred by so many equipment engineers and suppliers. Full information is yours on request. Write for free booklet.

Write today for full information

ELECTRIC SPECIALTY CO.
176 South Street, Stamford, Connecticut

DESIGNED FOR THE FUTURE

TELECABLE®

EXCHANGE AREA CABLE

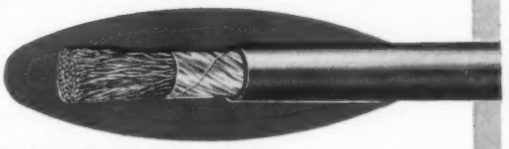
EFFECTS ECONOMIES TODAY!

Your needs today, when correctly interpreted and properly met, mean tremendous savings in the future.

TELECABLE Exchange Area Cable meets today's needs and, as manufactured under Whitney Blake high standards of quality, promises to favorably affect the future economy of the Independent Telephone Industry as greatly as WB TELEPRENE® neoprene jacketed drop wire has in the past ten years.

Only products of the highest quality can effect such economies — and the Whitney Blake reputation for top quality products is known throughout the industry.

TELECABLE Exchange Area Cable is available in #24, #22, and #19 AWG, in 11, 16, 26, 51, 76, 101, 152 and 202 pair. It has polyethylene insulation, polyethylene tape over cabled pairs, an aluminum shield and black weather-resistant polyethylene jacket.

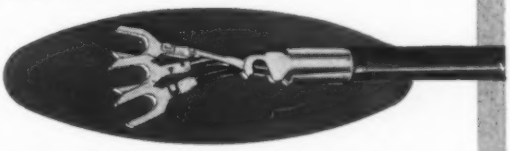


TELECABLE Inside Wiring Cable

TELECABLE INSIDE WIRING CABLE has semi-rigid Plastite® insulation and brown or ivory Plastite jacket. Light in weight. Water resistant. Excellent electrical characteristics. Unaffected by humidity. Ideal for duct work.

TELEPRENE® Neoprene Jacketed Drop Wire

Famous WB long life drop wire has demonstrated that a BETTER wire is much more economical than a CHEAPER wire.



TELECORD® Neoprene Jacketed Telephone Cord

This sturdy, long-lasting telephone cord resists abrasion, perspiration, humidity, oil and grease. Specify TELECORD on new telephones and on replacements for economy and service.

INDEPENDENT

Well Built Wires Since 1899

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WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

FLASHES AND PLUGS

TIME AND MOTION STUDY. The old mountaineer was sitting in his favorite cane-backed rocker on the porch of his cabin, slowly rocking east and west. Nearby sat his 42-year-old son, rocking north and south.

"Son," drawled the old man, "it's about time you learned not t'wear yersef out thataway. Rock the way the board runs, and save yer stren'th."

•

CROSSED WIRES. A friend is still puzzled by something that happened to him the other early morning, relates *Wisconsin Telephone News.* At a party he decided to call up a friend and bid him join the fun.

Apparently he dialed the wrong number. He apologized to the sleepy voice that answered.

He tried again and got the same voice. "I'm terribly sorry," he said. "I dialed most carefully. I can't understand how I got the wrong number."

"Neither can I," said the sleepy voice. "We have no telephone."

•

MOOT POINT. A woman in Kodiak, Alaska, called the bank recently and asked about information on Series E savings bonds, reports the United Press.

"Conversion or redemption?" asked the bank president.

"Is this the Bank of Kodiak or the Community Baptist Church?" She demanded.

•

IDES OF APRIL. An American and Dutchman were talking. "What does your flag look like?" asked the American.

"It has three stripes," replied the Dutchman, "red, white and blue. Has something to do with taxes, we always say: we get red when we talk about them, white when we get our tax bills, and we pay till we're blue in the face."

"That's just how it is here," agreed the American, "only we see stars, too."

•

IRONY OF IT ALL. Mrs. Granville Fortescue of West Palm Beach, Fla., it seems, is on Southern Bell's waiting list for telephone service. She is having a new home built in an area where cable isn't.

While she's waiting for a construction job, she must use the contractor's temporary telephone mounted outside on a post. True, there are a good many people in the same fix in which Mrs. Fortescue finds herself.

What makes this story news is the fact that her uncle was a gentleman named Alexander Graham Bell, comments *Illinois Bell Telephone News.*

CIRCULATION

Guaranteed circulation of this issue is 10,881 of which 10,342 is paid.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

March 24, 1956

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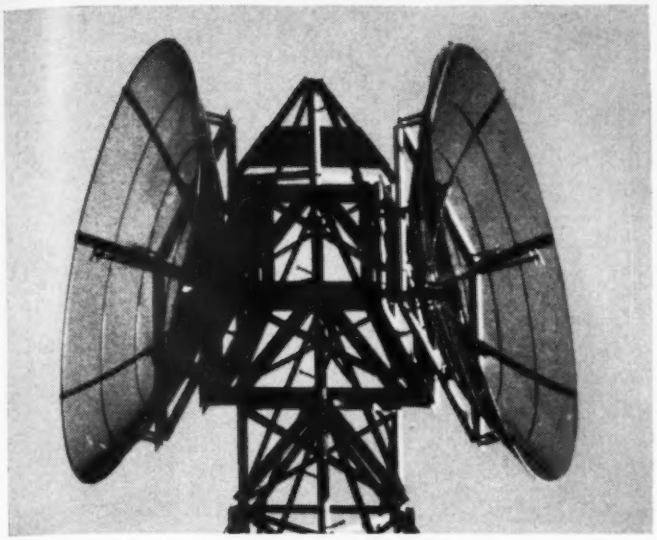


BLAW-KNOX MICROWAVE PACKAGE

brings better telephone service to 100 communities

Three Blaw-Knox Microwave Transmission Towers are an important part of a recently completed three city–two state microwave-telephone toll system which was engineered, furnished and installed by Lenkurt Electric Company and Automatic Electric Sales Corporation.

This modern system links the Home Telephone and Telegraph Company of Indiana with General Telephone Company of Ohio. Originating at the 200′ Blaw-Knox self-supporting tower in downtown Fort Wayne, Indiana, signals are beamed to a 170′ Blaw-Knox guyed tower on the outskirts of Antwerp, Ohio. From this mid-point, messages terminate at the 150′ Blaw-Knox self-supporting tower in Bryan, Ohio.

Excellent toll service is now provided subscribers in more than 100 Ohio and Indiana communities . . . yet the cost of this efficient microwave-telephone link was less than a normal cable hook-up.

We'd like to help you plan better service for *your* customers. Write today for Booklet 2516, which illustrates Blaw-Knox Microwave Towers and describes Blaw-Knox tower engineering, design, fabrication and erection services.

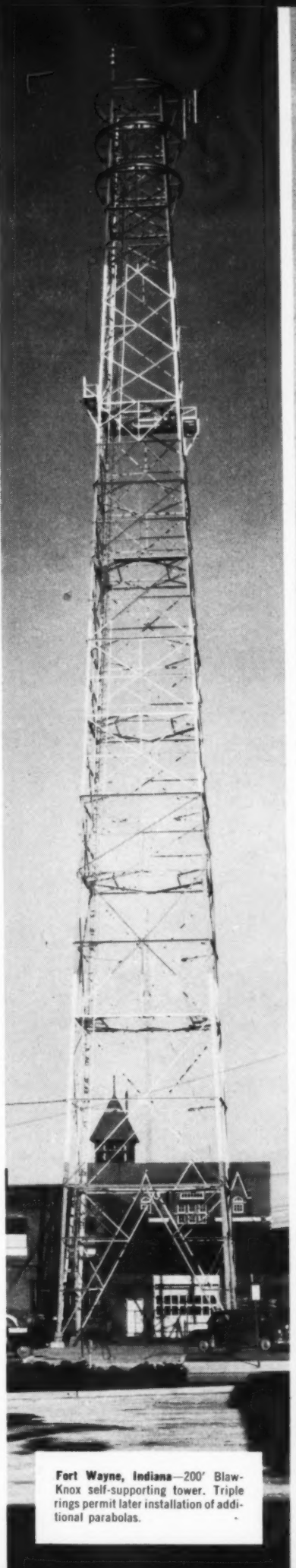
BLAW-KNOX COMPANY
BLAW-KNOX EQUIPMENT DIVISION
PITTSBURGH 38, PENNSYLVANIA

50th Anniversary
BLAW-KNOX
1906-1956

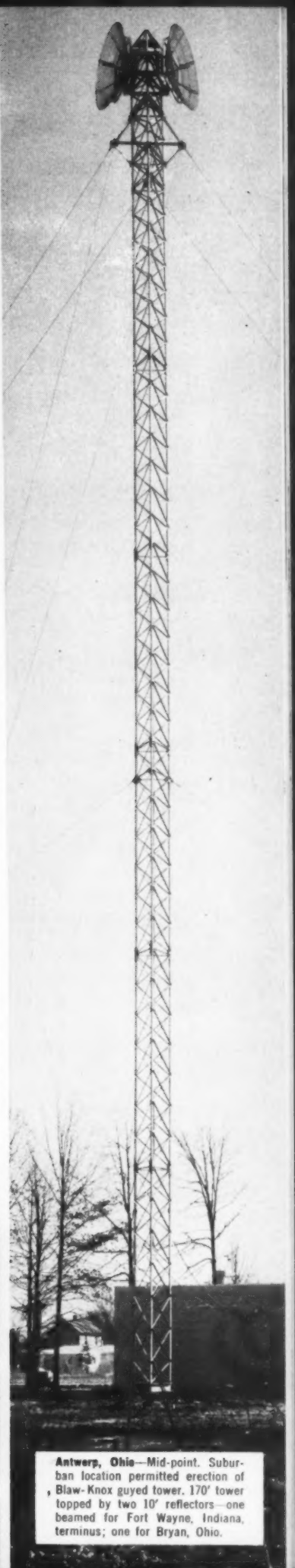
MICROWAVE TOWERS

Towers for Microwave, AM, FM, TV, Radar . . . guyed and self-supporting . . . steel transmission towers . . .other special structures . . . all custom built for your needs

Member INDEPENDENT



Fort Wayne, Indiana—200′ Blaw-Knox self-supporting tower. Triple rings permit later installation of additional parabolas.



Antwerp, Ohio—Mid-point. Suburban location permitted erection of Blaw-Knox guyed tower. 170′ tower topped by two 10′ reflectors—one beamed for Fort Wayne, Indiana, terminus; one for Bryan, Ohio.

XUM

Here's Proof of Performance...

Pressure-creosoted poles stand up better

reports North Carolina Utility

The Carolina Telephone & Telegraph Company, serving 100,000 customers, is the largest telephone utility in North Carolina, and has been using pressure-creosoted pine poles since 1925. At the present time they have more than 154,000 poles in use on more than 4,500 miles of line. They are adding to this number at the rate of about 10,000 poles per year and within a short time the few remaining untreated poles will be replaced with pressure-creosoted poles. All of the pressure-creosoted poles in use here were supplied by a treater who uses USS CREOSOTE.

The operating officials of the Carolina Telephone & Telegraph Company say that pressure-creosoted poles enable them to offer their customers more efficient service. Their pressure-creosoted poles not only withstand the attack of termites, rot, fungi, and adverse soil conditions, but they also stand up well under adverse weather conditions like the hurricanes that have hit their area in recent years. These same officials add that they are convinced that pressure-creosoted poles are a worthwhile protection for their valuable investment in service and equipment.

For more information on pressure-creosoted utility poles, send for the free USS booklet, "A Report on Pole No. 92159." Just write to the nearest District Sales Office of United States Steel or directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

The poles in this line of the Carolina Telephone & Telegraph Company, located near Pinetops, N. C., have been in service for 25 years, and the company believes they are good for several more years. Although the overhead line load has doubled in the last decade, these older pressure-creosoted poles are still strong enough to handle the increased load.

You can obtain clean pressure-creosoted poles upon specification without sacrificing pole service life.

USS CREOSOTE

6-624

SALES OFFICES IN PITTSBURGH, NEW YORK, CHICAGO, CLEVELAND, SALT LAKE CITY AND FAIRFIELD, ALA.

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UNITED STATES STEEL

Butyrate conduit is so light that one man can easily lift six 20' lengths, 2" in diameter.

Slip-sleeve couplings and solvent cement join lengths of Butyrate conduit quickly and permanently.

Butyrate conduit can be covered with concrete or subjected to any normal backfilling operation.

Butyrate's resistance to corrosive and electrolytic attack permits installation even in strong alkali soils.

Flexibility of Butyrate conduit permits it to follow ditch contours without the use of fittings—even a 90° bend, as here.

Specify Tenite Butyrate cable conduit for faster, easier installations that last longer

Cable conduit made of Tenite Butyrate offers you these specific advantages over ordinary conduit: It can be handled, cut and joined with ease and can be bent around most obstacles—which means that installing conduit for power lines and telephone cable need no longer be a long or expensive process. It has an impact strength often lacking in other materials and in service, is unaffected by corrosive or electrolytic action of soil—your assurance of long years of trouble-free service.

Find out how cable conduit of Tenite Butyrate can save you time, labor and money. For more information and the names of manufacturers supplying Tenite Butyrate conduit, write: EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

TENITE
BUTYRATE
an Eastman plastic

NEWS

blished every day ✍ Rain or Shine

AY, JULY 2, 1897 — 12 PAGES

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magnificent

Master Strop

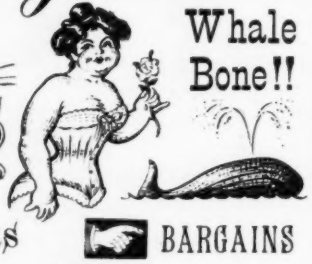
Hon. Floyd Tycoon Sidesaddle

st respectfully invites your att-
d in fact many distinguished
tly proud! — Balderdash's

$1.75 up

Genuine

Whale Bone!!



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Wimple Dry Gds.

nest Goods ✍ No Trash

ANNOUNCES NEW
RRY SCHEDULES

57	1523	108	235		358
	W T				
3—4	2—4	3—4	3—4		2—4
328	447	—	602	—	823
335	454	—	610	—	834
42	459	—	623	—	841
	407	—	631	—	822
		—	642	—	902

November.

KELLOGG BUILDS WORLD'S LARGEST SWITCHBOARD FOR ST. LOUIS

St. Louis, July 2, 1897—The experts predict that someday the telephone will be as common as the gaslight, and that almost everybody in St. Louis will have one of these new contraptions. A big step was taken recently when the Kenloch Telephone Company engaged the Kellogg Switchboard and Supply Company to build a switchboard for them here. Now nearing completion, this switchboard will be the largest ever manufactured to be housed in one exchange room.

Milo Gifford Kellogg, the manufacturer, is a pioneer in the development of telephone equipment. He has invented many telephone devices. In fact, recently he was granted 125 consecutively numbered patents.

continued on page 2 col. 1

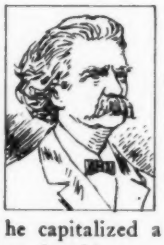
QUEEN VICTORIA TO VISIT COLONIES IN AFRICA

May stop at Bango-Bongo

QUEEN VIC

The Queen's vigour and enterprise seem to increase with years. William's exhausting visit was over. She took the train to North Wales and spent
e were more deputations and more
ondon she attended a vast
Park. She d

MARK TWAIN SPEAK ON MIS RIVER LORE A LADIES' ANNUA



Mark Twain many years bef himself as any writer to wh of good fort Sooner or l when in 18 he capitalized a publishing produce his own works, but establishment of someth authorship. It probably ing those years that a celebrity for a g be persuaded to re had come as a ma as a tribute to geniu would be worked o

PROF. PAPPEP'S
GOOSE-GREAS
LUXURIANT MOUSTACHE

HORSES OVERC BY 106° HEA

It was the a stayed for a ni nearly sixty ye drove to the h that mor received of the

In 1897 we were preparing to serve you in 1956!

and in 1955 we were still installing some of the largest systems in the independent industry.

James Kellogg, President of Kellogg Switchboard and Supply Company, inspects the Las Vegas installation. The Las Vegas cutover marked the merger of more than 20,000 stations in one integrated system.

1900
1910
1920
1930
1940
1950
and more to come

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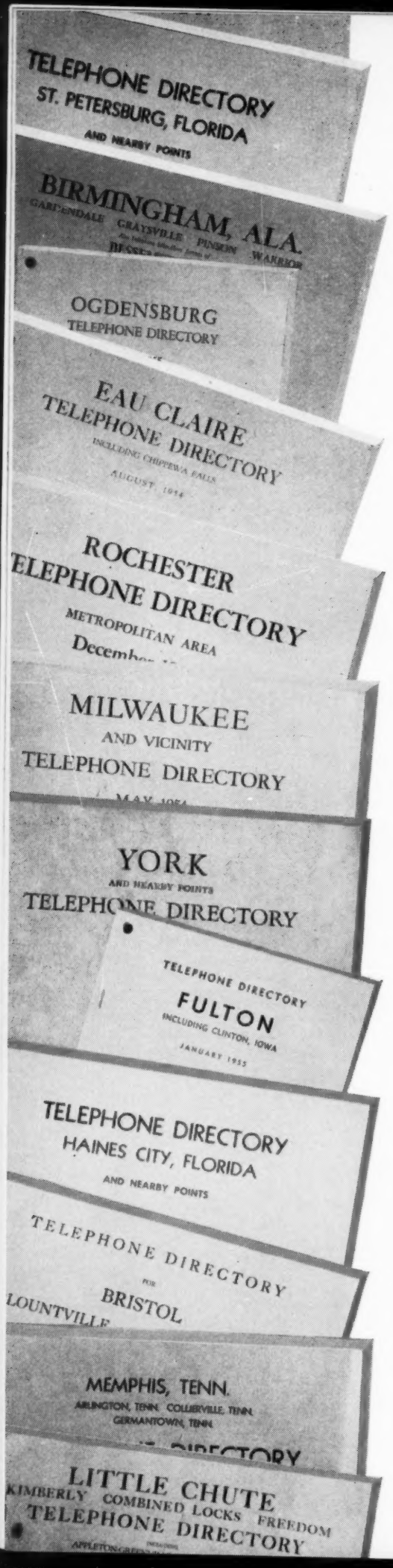

TELEPHONE DIRECTORY ADVERTISING EXCLUSIVELY

Since 1910

L. M. BERRY AND COMPANY

General Offices • Hulman Building • Michigan 7421

DAYTON, OHIO

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

USITA's national advertising program seen as important medium of making FCC conscious of Independent industry. . . . Independents get attention in congressional hearing on commission's budget request. House committee recommends changes in communications excise taxes.

THERE is increasing evidence that the advertising program which Independent telephone companies (through the United States Independent Telephone Association) have been conducting to make people more conscious of the industry, its functions and importance, is bearing fruit. Not long ago your correspondent heard a national news broadcast, originating in Washington (Allen Jackson over the Columbia network, Mar. 9), in which the commentator broke off in the middle of a spot news tribute to the 80th anniversary of Bell's discovery of the telephone to pay compliments to the service being performed by the "5,000 telephone companies in the United States." Things like that are cropping up every so often, showing the result of the seed planted by the USITA advertisements.

This week the House Appropriations Committee released printed testimony taken regarding the budget for the Federal Communications Commission. A paragraph on the FCC started off with the commission's own justification of its budget for regulating common carriers as follows:

"This function relates to the regulation of common carriers (public utilities) which furnish interstate and foreign telephone and telegraph services to the public by wire and radio, and the licensing of all radio used in common carrier communications whether interstate or not. Common carriers regulated consist of (1) some 5,000 telephone companies providing nation-wide domestic telephone network with 53 million telephones and gross investment of 16 billion dollars; (2) domestic telegraph carrier providing nation-wide telegraph system with 23,000 public telegraph offices, 300 million dollars gross investment; and (3) 18 international telegraph carriers providing world-wide telegraph and telephone networks by cable and radio that connect with nearly every inhabited point on the globe and ships at sea, 130 million dollars investment."

This statement about the 5,000 telephone companies in the United States attracted the attention of Representative Thomas (D., Tex.), chairman of the Sub-committee on Independent Offices. So when FCC Chairman McConnaughey was on the stand the following colloquy took place:

"MR. THOMAS. Rate-making for nation-wide interstate and foreign telephone services furnished by some 5,000 telephone companies. Principal kinds of interstate services of telephone companies are—we read that into the record, did we not?

"MR. MCCONNAUGHEY. Yes, sir.

"MR. COWGILL (chief of FCC Common Carrier Bureau). Yes, sir, that is correct.

"MR. THOMAS. Where do you get that figure of 5,000 telephone companies?

"MR. COWGILL. That figure includes all of the so-called Independent telephone companies in the United States.

"MR. THOMAS. How does that break down between the small Independents, we will call them, and the major companies?

"MR. COWGILL. Well, the Bell System has 23 associated companies which make up that system, and the long lines department, which is the interstate operating entity.

"From there on, you move into all of the small Independent companies to make up this total of approximately 5,000 companies.

"MR. THOMAS. How many stations do the 5,000 companies have and what part of them are owned by the majors and what part by the Independents?

"MR. COWGILL. There are some 53 million or 54 million telephones in the United States. . . . In round figures that would break down to about 80 per cent Bell System and 20 per cent for the Independents."

This writer can recall the time, not so long ago, when the chairman of the FCC as well as other commission officials might have had to go back into their own records to find out how many telephone stations there are and what proportion of business they did in relation with the Bell System. As for the congressional committee members, this writer can recall mentioning an Independent telephone company to a distinguished New York congressman (who shall be nameless, for obvious reasons) and he got this question from the New Yorker: "An Independent telephone company? What is that?"

Cost of Regulation

As part of the FCC's budget justification it is interesting to note the statement that federal regulation "cost less than one penny per telephone per year." The FCC arrived at this figure by comparing the cost of FCC operations—as allocated to its telephone regulation duties—to the cost of telephone and telegraph services used by the subscribing public. This averages out at $1.00 for FCC operations for each $7,200 the public spent on communication services. The FCC's budget statement made the following comment on the importance of the telephone industry and its regulation:

"The public's financial interest is indicated by the fact that the annual telephone and telegraph bill is ap-

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proaching 6 billion dollars. The public's interest is evident also because these nation-wide and world-wide systems are our communication lifelines — commercially, socially, and for defense.

"Common carriers regulated by the commission operate as monopolies or in restricted competition. The commission is responsible for securing by regulation all the benefits of constantly improving service and reasonable rates that normally are obtained by unlimited competition and, at the same time, avoiding the disadvantages of unlimited competition.

"Common carrier workloads are increasing, principally as a result of continued rapid growth of the telephone industry, development of new services, and changing communications requirements of the public. Besides, the commission's activities already are deficient in certain areas, with the result that backlogs of unresolved problems have developed. The highlights of this workload and the principal areas of deficiency in the commission's operations are as follows:

"The telephone industry expects to continue growing at a rate of over 1 billion dollars a year, with expanding uses of radio and other new facilities and services introduced on a nationwide scale, portending a continued growth in service problems and numbers of applications. The commission now receives and processes nearly 5,000 applications a year for extensions of lines, radio licenses, reductions in service, etc.

"Rates for carrying TV programs, monochrome and color, are expected to require extensive hearings. The commission has never determined reasonableness of rates for this service—now a 40 million dollar a year business—even though the Communications Act requires that rates shall be lawful, just and reasonable. . . .

"Accounting regulation is deficient in coverage of industry. No field studies have ever been made of most of the large telephone companies regulated by commission, yet accounting data furnished by companies is relied upon for all rate regulation.

"Seventeen thousand sheets of tariff material are received and processed each year.

"In contrast to the growing communications industry and increasing regulatory problems, the staff employed in common-carrier activities has been cut severely in recent years. The average employment in common-carrier activities in 1950 was 168.4. In 1955, the commission was able to allot only 113.4 to this activity with 111.7 allocated for 1956.

"For 1957 an average employment of 122.7 is requested to permit filling some of the positions that have become vacant in recent years. . . ."

States without Regulation

Another interesting point which the committee members discussed with the FCC members was the question of coverage of state commission regulation. Representative Thomas (sub-committee chairman), being from Texas, where there is no state commission telephone regulation, wanted to know about other states which do not have such regulation. He was somewhat surprised when the FCC common carrier expert, Mr. Cowgill, told him that in only two states—Iowa and Texas—was there no state commission regulation at all. The following exchange ensued, with FCC Commissioner Bartley (also from Texas) getting into the argument:

"MR. THOMAS. In the states that do not have a regulatory agency, what protection does the user of the services within those states have, and if he does have any protection, where does he get it; from the Federal Communications Commission?

"MR. COWGILL. No, he gets it on a local basis, city by city.

"MR. THOMAS. Where does the city get it? I know of no cities in my own state that are particularly equipped to do this job.

"MR. MCCONNAUGHEY. Theoretically that is what they do. They are the only ones having that authority.

"MR. THOMAS. In the final analysis the court house is the answer?

"MR. MCCONNAUGHEY. That is right.

"MR. THOMAS. Who is qualified in the court house to answer these very complex and technical questions?

"MR. MCCONNAUGHEY. Generally, no one.

"MR. THOMAS. Well, the utilities themselves are the ones most qualified to do that. They have their experts and, in the final analysis, you have to trust their judgment, do you not?

"MR. BARTLEY. Mr. Chairman, I would like to ask Mr. Cowgill, because he is in that bureau, to tell you a little about the history of the requests which cities have made for information in connection with their rate cases.

"MR. THOMAS. Surely, I shall be glad to have that information later. What progress are these two great states of Texas and Iowa making in coming up with some type of regulatory body? Is there any move afoot that you know of to do that?

"MR. DOERFER. Nobody knows; it comes up perennially.

"MR. THOMAS. You mean it comes up every year and nobody does anything about it?

"MR. DOERFER. Yes.

"MR. THOMAS. What is the argument against setting up one of these regulatory bodies?

"MR. MCCONNAUGHEY. There is no valid argument against it.

"MR. THOMAS. Do the utilities fight it?

"MR. MCCONNAUGHEY. I do not know.

"MR. THOMAS. Commissioner Bartley, what is the history of it in Texas?

"MR. BARTLEY. I am not so sure but that the companies might definitely approve a state commission as contrasted with the conditions under local jurisdiction.

"MR. THOMAS. Is it because the various cities and towns in these states do not want to give up their jurisdiction over the matter?

"MR. BARTLEY. That would be my guess about Dallas.

"MR. THOMAS. Do these various cities and towns, where they want to maintain their jurisdiction, have a staff of qualified experts to deal with the subject?

"MR. DOERFER. They get their expertness mostly by hearing what goes on in their state or community, and they start from the end and work back a little bit.

"MR. THOMAS. If they have 10 contests, do they not usually give them increases in about nine out of 10, or 10 out of 10?

"MR. MCCONNAUGHEY. In Texas, your railroad commission is a pretty able commission.

"MR. THOMAS. Yes; they have some able men on it in the field of oil and gas, but what about the field of railroads, and this particular field? They do not have any jurisdiction over them, do they?

"MR. MCCONNAUGHEY. No, sir, they do not. It never was given to them by your state.

"MR. DOERFER. They still have the nickel public telephone in Texas.

"MR. BARTLEY. I was not going to mention that.

"MR. THOMAS. Yes, it is a dime every place else. Maybe we do not need that. They keep that nickel rate in effect but maybe they boost the home rate.

"MR. BARTLEY. That may be. I do not know what happens to the local rate as the result of that.

"MR. THOMAS. How is this bureau doing?

"MR. COWGILL. The bureau is accomplishing as much, I believe, as it could reasonably be expected to accomplish with all of the considerations that you might take into account in making an answer to that question."

Excise Taxes

The Internal Revenue Service has decided that those boxing matches, opera broadcasts, etc., which you may have been enjoying (for a fee) via a closed circuit television is a communications service, subject to the regular excise tax—just like any other kind of telephone communication. Both Bell and

Independent telephone companies will be affected by this ruling to some extent. The American Telephone & Telegraph Co. leases its intercity facilities for closed circuit relays. At the same time, local telephone companies lease wire and transmission equipment used to convey broadcast and telecast to the downtown theaters, auditoriums, and other places where such closed circuit entertainment is featured.

No reliable estimate has been made of the total revenues involved, which will be subject to the tax, although it is believed to be something in the order of less than half a million dollars a year. The question came up in connection with certain minor changes being considered in the communications excise taxes by a sub-committee of the House Ways and Means Committee.

In other respects the House Ways and Means Sub-committee recommended a number of technical changes in excise taxes which dispose to make the law more orderly and clear. It also is supposed to result in a net revenue loss for Uncle Sam of about 2 million dollars a year. The changes would be as follows:

(1) An exemption for installation charges is provided under the present law in the case of local telephone service. This exemption would be extended to the other kinds of communication installations.

(2) "Local telephone service" would be redefined so as to exclude all toll telephone messages, rather than only those for which a charge of over 24 cents is made and so as to exclude private leased wires in a local exchange area.

(3) The term "toll telegraph messages" would be substituted for "long distance telephone messages" and all toll messages, whether under or over 24 cents, included in this category. Shifting toll messages of 24 cents and under, to this category will extend slightly the exemption presently provided for the public press in the case of "long distance telephone messages."

(4) Teletypewriter services are presently included in the 10 per cent tax on "leased wires, teletypewriters, and talking circuits special services." Teletypewriter exchange service would be defined as a service whereby teletypewriter stations are connected into central offices through which communications may be established with other teletypewriter stations similarly connected. In the case of this service, terminal facilities would continue to be included in the tax base as they are at present. However, the exemption for common carriers (such as railroads), telephone, and telegraph companies and radio stations, presently provided in the case of the tax on leased wires, teletypewriters, and talking circuit special services would be made inapplicable in the case of the new teletypewriter exchange service tax.

(5) In lieu of the present tax on

(Please turn to page 39)

New REA Loans to Aid 2,000 Rural Families

Modern dial telephone service is proposed for 2,029 more farm homes and other rural establishments in loans made by the Rural Electrification Administration the week of Mar. 4. The U. S. Department of Agriculture announced that the new loans amounted to $938,000 and were made to telephone companies in Alabama, Maine, Texas and Washington. Details follow:

Arab (Ala.) Telephone Co. on Mar. 8 was extended a loan of $45,000, third REA loan. This loan will enable the company to build 42 miles of new line to provide modern dial telephone service to 109 additional rural subscribers in Marshall and Morgan counties.

Loans to the Arab company now amount to $671,000, making possible new and improved service to 1,659 subscribers over 269 miles of line.

L. D. McDonald is president and manager of the Arab Company.

*

Hartland & St. Albans Telephone Co., Hartland, Me., on Mar. 8 was allocated $150,000, to finance the improvement and extension of Rural telephone service in Somerset County.

The new borrower is a commercial company, now furnishing magneto service to 503 rural subscribers over 114 miles of line. It proposes to convert the existing system to dial operation and add facilities to serve 85 rural families now without telephones.

The company is planning a new automatic central office building in Hartland and the addition of 7 miles of line to its system.

Dr. Arthur L. Moulton is president and manager of the Hartland & St. Albans Telephone Co.

*

Clifton (Tex.) Telephone Co. on Mar. 9 was extended a loan of $308,000, first loan, to improve and extend telephone service in Bosque County.

The new borrower is a commercial corporation which now provides common battery service to 644 subscribers through its Clifton exchange. It also has under construction a new automatic exchange building at Laguna Park. With the REA loan it proposes to construct a new automatic central office at Clifton, complete the Laguna Park exchange and add 158 miles of new line in the expanded system. About 86 miles of the existing 89 miles of line will be rebuilt and the remainder retired. Part of the loan funds will be used to refinance existing indebtedness of the borrower.

When construction is completed, the Clifton company will be able to offer improved service to the existing subscribers and to serve 216 families now without telephones.

J. E. Blewett Jr. is vice president and general manager of the Clifton Telephone Co.

*

Skagit Valley Telephone Co., Mount Vernon, Wash., on Mar. 9 was given an allocation of $435,000, third REA loan.

The borrower proposes to use the loan funds to provide facilities to serve 472 new subscribers not included in prior loans, and to complete the system originally planned. Additional facilities required will include 151 miles of line.

The three REA loans, totaling $1,912,000, will enable the Skagit Valley company to provide dial telephone service to 7,329 subscribers over 875 miles of line in Skagit and Whatcom counties. The completed system will have 11 exchanges.

G. J. Stover is president and manager of the Skagit Valley Telephone Co.

Correction: The headline and introductory paragraph of the announcement in TELEPHONY's Mar. 17 issue, p. 22, should have read "$3,599,000," not "$4,599,000."

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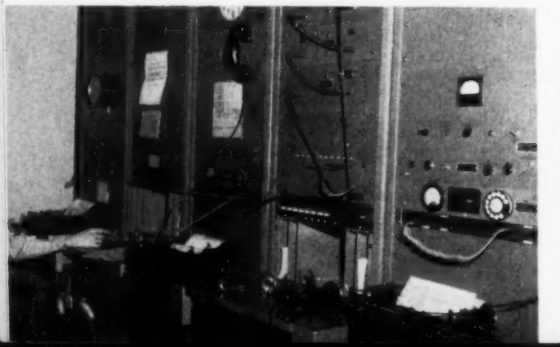
By RAY BLAIN

Operator, Cpl. D. A. Bowser, on duty at Adak.

uilding housing ACS switchboard at Anchorage.

)perator at Anchorage "Bush Phone" terminal.



HISTORY teaches us that what is now the Territory of Alaska was discovered by roving Russian traders back in 1741. In 1867, the then Secretary of State, William H. Seward, purchased Alaska from the Russians for 7.2 million dollars. In 1880, gold was discovered in Juneau, and in 1896, the Klondike gold rush began. Since that time, Alaska has produced nearly 400 million dollars in gold, and an equal value of copper and silver. The United States Geological Survey estimates that at least as much remains to be mined. Moreover, there is little doubt that the fish and fur industries have brought more wealth to Alaska than all its gold. All this, at the time of the Alaska purchase by the United States, was often referred to as "Seward's Folly" or "Seward's Ice-Box."

Covering 586,000 square miles of the earth's surface with 26,000 miles of ocean coast line, Alaska is almost twice the size of Texas. The census figures for 1950 credits this territory with a population of 128,643 and an estimated 150,000 in 1952. The 1940 population was only 72,524. These figures do not include military personnel on duty in Alaska. The 1950 census indicates a population of 0.2 persons per square mile in Alaska, while Nevada, our least populated state, had 1.5 persons per square mile at that time.

It has often been said that unusual and difficult problems come easily in Alaska. To efficiently handle local and statewide communications for a population seven times sparser than Nevada, spread over an area twice the size of Texas, is admittedly a big job. Then add to this the unique characteristics of the territory: marshy, mosquito-infested flatlands, the highest mountain range in North America, permanently frozen subsoil, a temperature range of 150 degrees, erratic atmospheric conditions, and you have a few of the elements that contribute to the numerous difficulties encountered in the provision of communication in Alaska. Nevertheless, local and stateside telephone and telegraph service is available to hundreds of small, remote Alaskan communities. The initiative of individuals, corporations and government agencies, together with the cooperation of the Alaska Communication System, of the Army Signal Corps' long distance system in the territory, have made this service possible.

Until May 27, 1936, the Alaska Communication System was known as the Washington-Alaska Military Cable and Telegraph System. WAMCATS, as it was generally referred to in those days, was established on May 26, 1900, to reduce the numerous difficulties encountered in the administration of the Alaska military garrisons at a time when no electrical communications existed in the territory. In that period, it normally required as much as a year to send a message from the interior of Alaska to the United States and receive a reply.

A telegraph line, 1,479 miles in length, was completed between 1900 and 1903 from Seattle through Canada to Alaska. Swampy land, muskeg, erratic glacier streams, floods, winter temperatures often as low as —70 degrees, and permafrost were among the many natural obstacles encountered. Maintenance of these lines proved a most difficult problem. The first radio circuit in

ones"

laska

Sgt. N. Olemaun, Eskimo "Bush Phone" operator for ACS.

Alaska between St. Michael and Nome was established about 1910. It is believed that this was the first commercial radio-telegraph circuit on the American continent. As radio developed, it gradually replaced the wire lines until 1926 when only 11 miles were maintained by the Alaska Communication System. Since World War II, however, land line communication has been restored in many areas and it is now an important part of the Alaska Communication network.

During the last war, the famous ALCAN line was constructed along the Alaska highway, the first overland telephone line connecting the United States and Alaska and the longest open wire carrier circuit of its kind in the world. Between the two terminals of this line —Edmonton, Alberta, and Fairbanks— 2,000 miles of pole-line spans the roughest wilderness of the North American continent. More recently, in 1950, a new open wire carrier line was constructed from Anchorage to Tok Junction, a distance of some 330 miles. At Tok Junction the new lead joins the existing ALCAN line and proceeds to Fairbanks, 205 miles farther north. An open wire line is also now in service from Glen Allen to the port of Valdez, a distance slightly over 100 miles. The Alaska Railroad also maintains and operates open wire telephone and telegraph lines along its route that connects Fairbanks, Anchorage, Whittier and Seward. The Alaska Communication System has carrier rights over many of the railroad circuits. These channels all connect into the toll network at the various switching centers.

Back in 1904, the first deep-sea telegraph cable was completed between the United States and Alaska and became a part of the WAMCAT system. There is presently under construction by the Alaska Communication System a submarine telephone cable, northward from Ketchikan, along the inland passage to Skagway, a distance of nearly 400 nautical miles. The American Telephone & Telegraph Co. also has completed plans to extend this telephone cable system south from Ketchikan in the Pacific Ocean for a distance of 800 nautical miles to Port Angeles, Wash. This cable should be completed late this year. The 36 telephone message voice channels to be provided by this new cable will be carried on into Seattle over a 65-mile radio relay system. In Seattle, the cable channels will be connected to the entire Bell System's toll network. The utilization of these facilities and the 3 CL toll centers of the Alaska Communication System at Fairbanks and Anchorage will undoubtedly make possible direct distance dialing between the United States and Alaska in the not too distant future.

Much has been written about strong individuals, Husky dog teams, and the daring Bush pilot who flies in regions where only the small single-engine

Operators at work on 3CL switchboard of ACS at Anchorage, to which "Bush Phones" are connected.

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plane can navigate to link the barren arctic outposts with the more populated communities. Equally as important, though perhaps not as glamorous or publicized, are the "Bush phones." These radio-telephones of the amateur or "ham" variety prove most important, even today, in the provision of essential communication to the scattered outposts of this rugged country. The absence of roads in these isolated regions makes electrical communication and airplane transportation most important. Roads are difficult and expensive to construct through tundra and mountainous terrain and will probably not be available in many areas for years to come. While these radio-telephones are referred to as "Bush phones" in the interior, they are usually known as "Cannery" or "Small Boat" telephones in southeastern Alaska.

Emergencies that involve the assistance of the "Bush phones" and the Alaska Communication System have become rather commonplace down through the years and today rarely come to the attention of anyone except those directly involved. A broken bone, a serious illness, a lost hunter or fisherman, a small boat in distress—all these the radio-telephone operator of the Alaska Communication System has come to expect, and every effort is made to notify the proper authorities so that necessary help may be provided with the least possible delay. The role of these men and women differ very little from the services performed by many telephone operators in the states who receive emergency calls requesting help from the police, fire department, doctor, or ambulance service. They differ only in the means of communication and the vast distances involved. Full credit belongs—and justly so—to the many individuals and rescue organizations in the north who must cope with the numerous difficulties of the arctic.

The "Bush phone" system was probably started back in 1930, according to available records, when Howard Burkher, then a young teacher for the Alaska Native Service, a branch of the Federal Bureau of Indian Affairs, set up a 10-watt amateur radio station at Igloo, a native village 50 miles north of Nome on the Seward Peninsula. The usefulness of what started as a hobby soon became apparent, and Mr. Burkher encouraged his fellow teachers to follow his lead. In 1937, nine teachers, operating their own equipment, had so proved the value of their amateur stations that they were licensed as official stations of the Department of the Interior.

By 1944 the Alaska Native Service had purchased all of the privately-owned stations of its personnel; earlier CW operation was being replaced by radio-telephones and the number of stations had so increased that Mr. Burkher was appointed administrative supervisor for their operation. Today this service operates more than 80 "Bush phones" in Alaska. Through them, administrative advice is handed down from centrally located supervisors to teachers in the field. Each day doctors give advice for the treatment of minor injuries and ailments of the populace of widely separated villages and, when serious illness occurs, arrangements can be made quickly to fly a patient to the nearest hospital. The "Bush phones" have made possible the maximum utilization of a limited number of personnel over an extensive area and, in many instances, their use has meant the difference between life and death.

The territorial government of Alaska, in recognition of the importance of communication in an emergency, established in 1936 the Territorial Department of Aeronautics and Communications, at Juneau, to make small radio-telephone stations available for the use of small remote communities then without any means of rapid communication with the outside. This territorial activity is now known as the Alaska Communications Commission which maintains a network of some 40 Bush phone stations throughout the territory. These stations all connect into the Alaska Communication System.

In southwestern and southeastern Alaska, fishing and other industries rely on "Bush phones" to send in daily catch reports, to call for supplies and to keep in contact with business offices in Alaska and stateside. Then, too, the large logging and mining industries, the small business men who operate trading posts and lodges, the missionary who must travel hundreds of miles a year to care for his congregation, all have found the "Bush phone" an essential and at times the only means of communication available to their needs.

The fact that a populace scattered over a large area places so much dependence on radio-telephone service is unusual in itself, but what distinguishes the use of this facility by Alaskans is the service offered by the Army Signal Corps' Alaska Communication System. Each day over 20 station operators of the Alaska Communication System are contacting the more than 275 "Bush phones," serving the same number of small communities in Alaska. Contact is made on a scheduled basis, each "Bush phone" being assigned a set time, e.g., 8:00—8:15, during which period its messages can be transmitted and received. When traffic is heavy, as it is at "Fishery phones" during the summer months, extra schedules are arranged. When an emergency occurs, the subscriber can reach the operator over a continuous monitored frequency.

In the larger Alaskan cities such as Fairbanks, Anchorage, and Juneau, a "Bush phone" subscriber can be patched into the city telephone system for a local call, or through the Alaska Communication System toll facilities to complete a call to any toll station in or outside Alaska. Thus, a person located 100 miles outside of Anchorage, from a comparatively inaccessible location, can actually place a call to Seattle, Chicago or New York City.

"Bush phone" subscribers, however, seldom request voice telephone service, even when it is available. Instead, the Alaska Communication System's stations normally act as relay points through which telegraph messages are relayed by voice to other "Bush phones," or received from them to be forwarded by teletypewriter to their destination. "Bush phone" operation results in some odd traffic phenomena. The necessity of sometimes copying a message that is being read over a radio-telephone channel, susceptible to interference, increases the factor of error and necessitates constant repetition and the use of phonetics. A "Bush phone" operator is usually doing a good average job at a relay point if he can handle six or eight messages an hour. During the busy around-the-clock summer operation, 20 to 30 messages per day over "Bush phone" circuit are generally considered to be about average normal traffic.

Besides requiring an unusual service from the Alaska Communication System, the "Bush phone" network places more than ordinary demands upon those who require telephone or telegraph service. For example, an initial outlay of approximately $500 is required to purchase proper equipment. Moreover, an FCC license must be obtained before a station can be placed in service. "Bush phone" service is provided on a toll basis under rates approved by the FCC. Furthermore, although emergency service is available from subscriber to operator, it is not usually available from operator to subscriber. Power for these stations in remote locations is usually an expensive problem. Gasoline engine driven generators are used in most stations as commercial electric power is not often available. There is no doubt though that "Bush phone" service proves a good investment for many small communities as it is their only means of overcoming isolation.

Despite some admitted shortcomings, the "Bush phone" has constantly proved its worth in Alaska. The lives that

(Please turn to page 38)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITOR

WE ENJOYED a visit recently here in Washington, D. C., with Harry M. Jensen of Chicago, who is the inventor and manufacturer of the Jensen power cable reeler.

The machine reels and unreels cable or wire and does away with costly damage caused by improper handling. It is designed to operate all types of reels, regardless of width, diameter or weight. It eliminates back-breaking labor as all of the heavy work is performed by a power drive. A remote control foot switch enables the operator to feed cable or wire onto a reel, starting and stopping as required. This device is readily adaptable to the task of pulling cable into or out of ducts and conduit.

This writer first met Harry Jensen back during the early days of the late war. He was just getting started with his new power cable reeler. We had a large number of big cable reels, filled with heavy cable, to handle in connection with the old Coast Defense installations. We bought one of the Jensen machines and it proved a great investment. Its contribution to the war effort in manpower saving and prevention of cable damage proved outstanding.

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It seems a pity that present day busy pay telephones are not equipped with a money changing device. These money changers are quite common in many types of automatic vending machines. Some of these machines will return the change from say a quarter when the purchase is only 10 cents. Others will change a quarter into five nickels, etc. Frequently we have noted a telephone call being delayed and circuit time wasted while a customer buttonholes passers-by in an attempt to obtain proper change.

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The Washington, D. C., fire chief has rejected a suggestion that the city's 1700 fire alarm boxes be replaced by a series of emergency telephones with direct lines to fire station switchboards.

The suggested change was recommended in a letter to the commissioners from the president of the Washington Taxpayers Association which stated that the telephone system was being used successfully in Miami, Fla., where the lines were leased from the telephone company. The letter also referred to the present District of Columbia fire alarm system as "antiquated, unnecessary and expensive." Further, that a telephone system would cut false alarm reports by making it difficult for pranksters to call alarms.

The fire chief, in reply, stated that the city's pull box fire alarm system was one of the "most modern" in the country. He added that a study of the relative costs of the two systems in New Orleans indicated that the telephone system would cost more than 11 million dollars to operate for 15 years as compared to 4 million dollars for the conventional system.

He also opposed the idea because of the lease feature. He claimed this would take away from the fire department some control over the fire alarm system and that this would not be in the best interest of the public.

While we do not care to express an opinion on the merits of the argument for either side, we are not exactly in agreement with the fire chief's remarks with reference to the reliability of leased communication facilities.

Maj. Gen. Gordon A. Blake, Director of Communications, United States Air Force, in describing the need for communications in national defense recently made the following statement:

"Our continental air defense system today is heavily dependent upon communications circuits to tie together all elements of the continental air defense. SAGE (Semi-Automatic Ground Environment) will increase our communications needs. As the speed and complexity of weapons increase, the electronic ground environment required to operate them becomes more complex. And communications is an essential element of this ground environment.

"Within the continental United States today we lease almost all point-to-point communications for air defense, and other domestic military operations. Our air defense communications are an integrated network. They originate from each volunteer ground observation post and they originate from radar stations operated to detect and track aircraft. They run through the complex of direction centers and control centers to the Continental Air Defense Headquarters. This vast web of communications covers the country from coast-to-coast. It is derived through leasing circuits from the commercial telephone system of the nation. . . ."

If leased facilities are proving adequate for the protection of our nation from enemy invasion then, in our humble opinion, they should likewise prove adequate for the provision of fire protection for any of our great cities.

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We enjoyed a visit recently with K. S. Williams of Crown Metal Products Co., Wyano, Pa. This firm is unique in that it fabricates special wire products for use of the communications industry.

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A recent study of 130 fatal automobile accidents was made by the police in Indiana in which 153 persons were killed and 220 automobiles were involved. Skilled investigators determined that if seat belts had been used, 69 per cent of those killed would have lived and another 12 per cent might have survived. That seat belts are a worthwhile investment has been proved without a doubt and many operating telephone companies are now considering their installation in the cars of their fleets.

Before adopting a seat belt, however, every one should make certain that the belt possesses adequate holding power and is properly installed.

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THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

TELEPHONE THERAPY is bringing skills and thrills to youngsters at Stuart School in the writer's home town, Springfield, Ill. Cerebral palsied and other handicapped children are learning with surprising ease how to operate a switchboard and talk to one another over their own telephone system.

Teachers are proud of the progress made in speech therapy and in occupational therapy through manipulation of the specially weighted plugs at the switchboard.

This fine project was made possible by the Illinois Bell Telephone Co., in cooperation with the Telephone Pioneers of America, and I.B.E.W. union local 399 which installed the switchboard. The idea of a telephone switchboard to help crippled children is new, but not untried. Similar projects have been successful in Decatur and Chicago, Ill.

The idea for the project in Springfield originated with local members of the Telephone Pioneers of America. They heard of the use of such switchboards and decided to secure one for the crippled children's center.

The switchboard and associated equipment, which had been in service since the turn of the century, was completely renovated. New wiring was installed. Modification of the circuits was made to prevent shock, and then double checked for safety.

In addition, oversize aluminum shells were made so the plugs would be easier to grasp. Weights of various sizes were attached to the cords extending from the switchboards to make them operate accurately and easily.

According to Pauline Leasman, Stuart School principal, and teachers at the crippled children's center, the switchboard and telephones constitute an extremely valuable addition to their therapy program, and to the center's equipment for training children suffering from cerebral palsy and other handicaps.

All of the children at the center enjoy the switchboard and talking to one another over the telephone. They regard its use not as training, but fun.

With the help of the switchboard, children learn the muscular coordination of such acts as turning on lights, turning faucets, and opening doors. Some of the youngsters have a natural aptitude in operating the switchboard, and some possess the "voice with a smile," one of the important qualifications of a switchboard operator.

One of the youngsters at the crippled children's center operates the switchboard with ease, despite her artificial arm.

The switchboard and telephone equipment is always used by the children under supervision.

Isn't it wonderful to know that an old discarded switchboard has been put to such good use through the interest of telephone employes, Pioneers, and the Bell Telephone Co.

No doubt there are many other such switchboards stored away that could be put to such good use. All it would require is a need, and the interest of a group of telephone people, since telephone companies no doubt would be glad to donate a switchboard no longer in service and the necessary material for such worthy cause.

Many people had a part in the project which put the old switchboard to such good use and they have every reason to be proud of their achievement. To bring help and pleasure to others less fortunate than ourselves, particularly to children, is a great privilege.

Let us hope that through the publication of this venture, others will become interested in developing such projects in their areas where the need exists. If only *one* additional switchboard is installed to help crippled children, it will be worthwhile.

We who have no physical handicaps take so much for granted, never realizing there are so many less fortunate than ourselves.

While reading the morning paper, I was startled to see a woman in a hospital bed who resembled me to such an extent I thought for a moment it was I. She was being attended by a grey lady and in reading the article it related their wonderful service to hospital patients. My thought was, "How fortunate I am to be able to work when so many people are hospitalized." Yes, we can all count our blessings, one by one.

Traffic Questions

(1) In testing Air Defense Warning Lines, if the station does not answer, what action should be taken?

(2) To whom should trouble encountered on an Air Defense Warning Line be reported when making a test?

(3) Should a log record be maintained for reference purposes in the central office in testing Air Defense Warning Lines?

(4) What details should be entered in the log record?

(5) How should a report be given on a call for a number that has been temporarily disconnected?

Answers are presented on page 46.

About the New Conservatism

"Politically, I feel sure we are becoming, to an extent that might surprise us, a nation of conservatives in the sense that more and more people have moved into an economic status where they have something to conserve. Our average American today, as he accustoms himself to his new situation, should become increasingly distrustful of measures which could upset his fancy new apple cart (with its two-tone finish in grape-juice blue and dappled gray.)"
—CRAWFORD H. GREENEWALT, *president, E. I. du Pont de Nemours & Co.*

Philosophy in Business

"More important than the technical skills of management are its objectives and its philosophy—its faith in expansion, innovation, and competition."—SUMNER H. SLICHTER, *economist, Harvard University.*

Section 3 (continued)

(21) Extension users' telephone habits have a decided influence on the over-all performance of a PBX system. The Service Adviser should closely scan the extension users' practices. A firm's reputation for good business procedures often stems from the way its employes use the telephone. When they employ their extension telephone properly it has a definite effect upon the quality of service at the switchboard and on the cost of the service to their employer.

(22) Extension users' telephone habits that negatively affect PBX operating should be discussed with the management. Should the faulty practices be of such a nature as to require contacts with individual extension users, it might be well to discuss the problem with the telephone company's Commercial Department before contacting the customer management. In this way it can be determined how and by whom the situation can best be handled.

(23) The Service Adviser should be cautious in her contacts with her PBX people. She should be envious of her importance in their opinion. She will never carry gossip from one PBX to another, if she values her popularity with her PBX folks.

(24) People are different and do not react to suggestions in the same manner. If the Service Adviser knows and understands her PBX people, she will find her job more pleasant and interesting. When the attendants feel that she knows and understands them as individuals, when they know that she is trying to help them enjoy their work, she will find them seeking her advice and not resenting her questions because they think she is prying into affairs that are not of her concern.

(25) The Service Adviser should get enjoyment out of her job. She shouldn't always be looking for something that is wrong, a habit that can eventually make her very unhappy, and very unpopular. Praise is one of the most important tools she has to work with. Even the most confirmed "crab" looks for and esteems a little genuine praise and appreciation. Everyone needs to be encouraged, if they are to persevere, stick to the job, and do good work. That's how pride and satisfaction of work well done is built into the job. It is important to always keep in mind that when you are looking for something to

criticize, you are starting off on the wrong foot. When you are looking for something to praise you are on the road to popularity—the right road to good PBX supervision.

Section 4

The Rating of Individual Attendants

Occasionally customer management of PBX systems ask Service Advisers if they will give their PBX operators a proficiency rating. They point out that they pay substantial wages (at the same time cite the cost of their telephone service) and consequently feel they are entitled to know more about the productivity and quality of the job each operating individual is doing.

Sometimes they sort of hedge a little and intimate while service really isn't too bad, it could be better and they want complete information about the relative competence of their operating people. They cite the job the operators are doing for the Blank Institution and wonder why their service isn't just as good, and express the opinion that perhaps one or more of their operators are not quite up to par in operating. They ask if the Service Adviser would investigate and let them know which attendants are performing poorly. Whatever the reason may be, it is essential that the Service Adviser know what she can and cannot do in cases of this sort.

To give a brief answer—the Service Adviser is in no position to rate individual PBX attendants. There are many reasons why this is so. First, and probably most important, the mere rating of individuals would not offer a panacea for an unsatisfactory service condition, because the remedy for unsatisfactory work does not lie in isolated periodic ratings, but rather in continuous day-by-day training that can be supplied only by a competent supervisory force.

The switchboard operator makes no product that can be picked up from time to time and inspected

This handbook will be reprinted if there is sufficient demand.

for quality and workmanship. The quality of the operator's job is determined by the skill with which she accepts and moves calls through her board. The measure of her ability, as well as her need for assistance, can best be determined by supervisory people who know the communication characteristics of the business in question and are qualified to give the long-term help by which operating proficiency is developed and maintained.

Another reason why the Service Adviser should take this position is because an activity of this kind would tend to undermine confidence in the customer's supervision. When a group of people see an important supervisory duty passed on to someone outside the organization, the inference is that their own supervisory force do not enjoy the confidence of their management. Such reaction is not good for the morale of a PBX switchboard force and has a depressing effect on the rest of the organization's telephone users, the extension people. By the same token, such a practice bodes no good for customer management either.

There is still another reason why the Service Adviser does not rate individual PBX operators—she recognizes her inability to evaluate certain non-technical qualities that require consideration in any fair attempt to rate individuals, such as knowledge of customer's organization, personnel and policies which can be judged only in their application to the telephone work by those who fully understand them. Items of a more personal nature that enter into the rating scheme are attendance, loyalty, dependability and attitude toward the job and fellow employes. To give an unbiased, fair picture of such matters, requires a better knowledge of a business and its employes than can be acquired in a limited time by a non-employe agency.

There is a final, and a very sound, reason why a Service Adviser should not involve herself in PBX operator rating. When the Service Adviser supercedes customer supervision in a program of rating individuals, she can expect to be held responsible for any resulting customer reaction that might not be to the liking of those concerned. That possibility introduces a real hazard to good relations between two groups of people who must work together congenially in the highly coordinated operating activities that underlie good telephone service.

(Section 4 to be continued next week)

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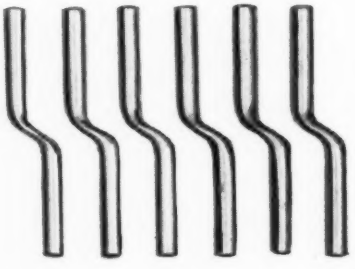

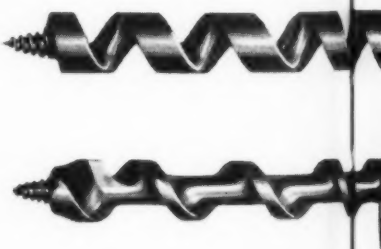

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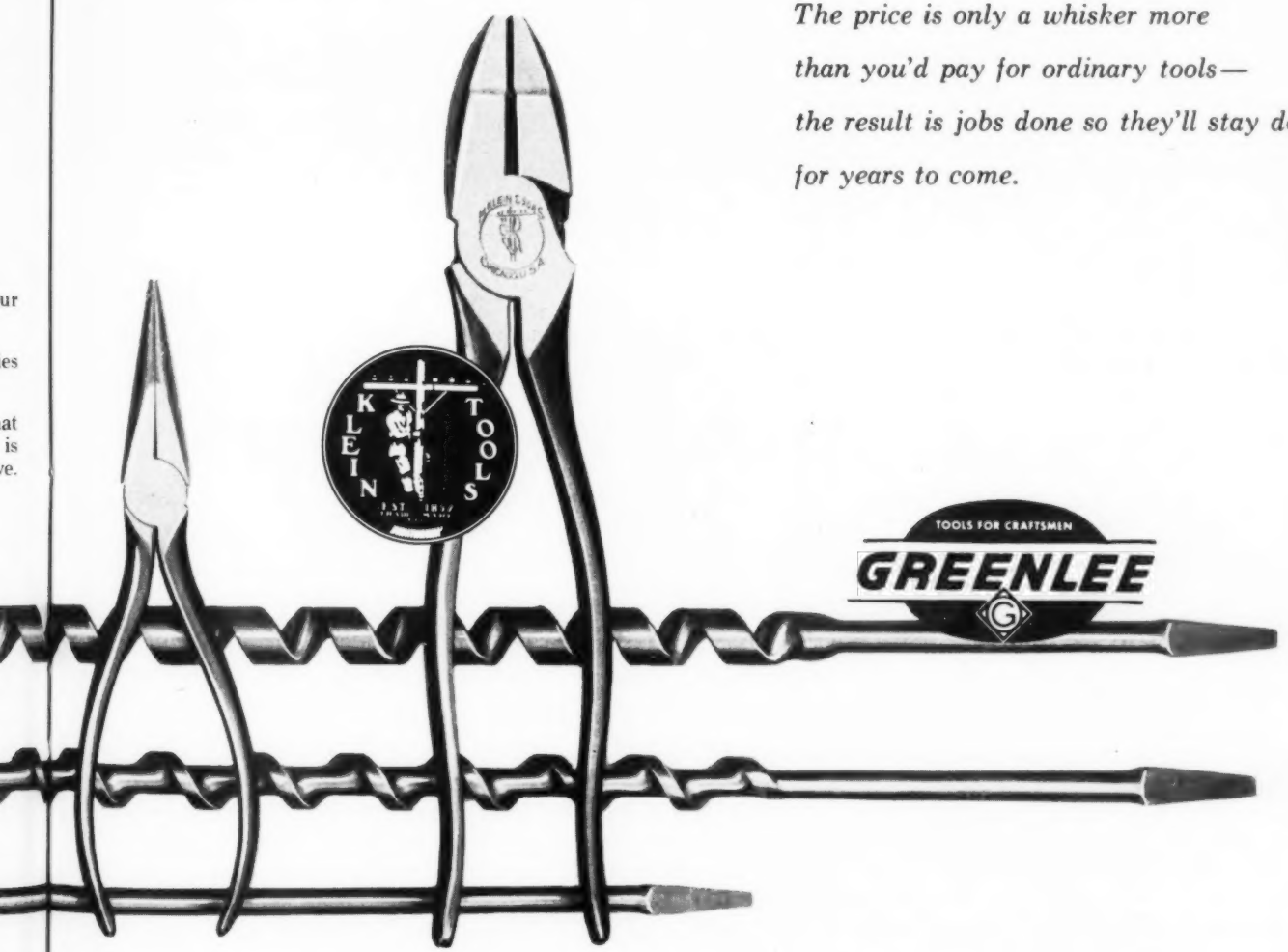

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907
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GENERAL SYSTEM

Max E. Wettstein has been President and General Manager of the Florida Telephone Corporation since 1953. His 25 years of active service with the Company in varying capacities makes him well qualified to serve as its chief executive officer. Mr. Wettstein's thoughts about Graybar are presented below.

"We have always valued highly our relationship with Graybar"

The growth of the Florida Telephone Corporation in the past ten years has been extensive. Total telephones in service have increased from about 9,000 to nearly 30,000 and now, a continuing major project is even greater expansion to keep up with subscriber needs in this fast-growing State.

Concerning Graybar — Max E. Wettstein, President and General Manager of the Florida Telephone Corporation, says:

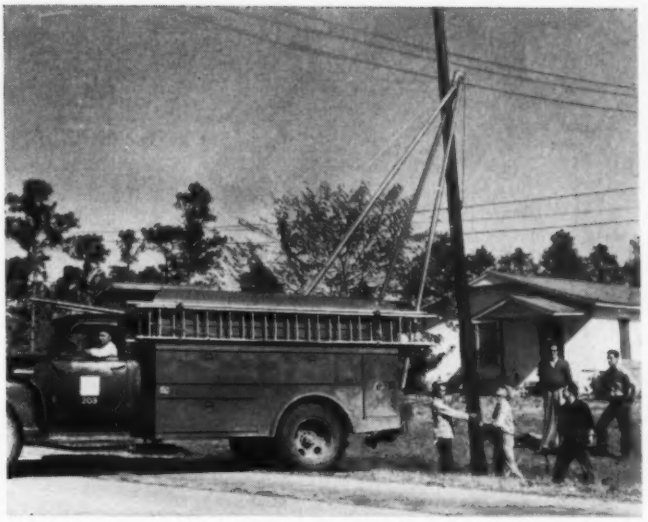
"Graybar has furnished us with line supplies, telephone instruments, cable and all of the various and sundry items comprising basic telephone plant for a long period of years.

"Throughout these years, we have experienced excellent Graybar service and have enjoyed the use of their quality products. Graybar has given us a specialized service through their experienced local representatives and nearby warehouse facilities which we feel is unsurpassed. In normal operations and in the many instances involving special treatment of urgent orders, Graybar has always come through to our complete satisfaction.

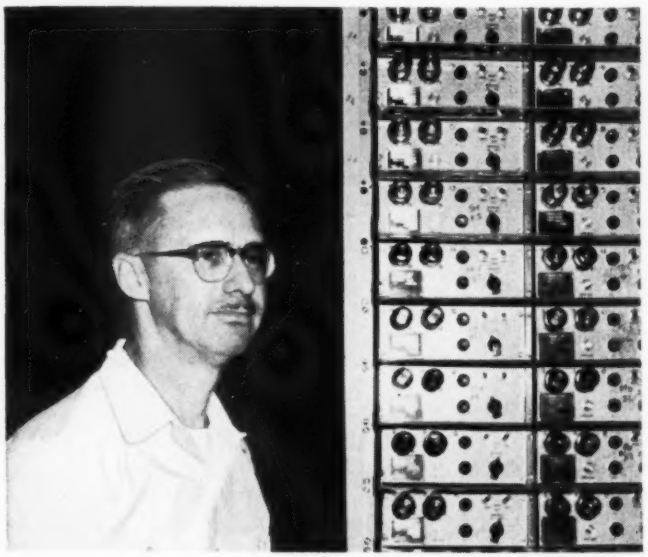
"We have always valued highly the fine relationship which Graybar and Florida Telephone have had with each other".

Thanks, Mr. Wettstein—we feel the same. And that's the way we operate throughout the United States, too. Many independent telephone companies rely on Graybar's warehouse system to carry their inventory. Pole line supplies for maintenance and new construction . . . central office equipment . . . subscriber carrier and toll circuit carrier . . . linemen's tools and safety equipment — all are conveniently available from Graybar located nearby. You too can benefit from Graybar's services. Call us for any telephone need. Like you, we are proud of our independent status. Graybar is owned solely by its operating and retired employees.

New Lynch B112 repeater installation is inspected by R. D. Eshbaugh, Chief Equipment and Building Engineer, and W. C. "Spec" Winfree, Graybar Manager of Communication Sales (pointing). The Florida Telephone Company now operates 18 exchanges and 5 subexchanges in eight counties in Central Florida. An accelerated expansion and improvement program will soon see its five remaining manual exchanges converted to dial operation.



Progress of a construction crew building additional rural lines is checked by Ralph Oswald, Plant Engineer, and Charles Whitaker, Line Foreman (left and right background). For both new construction and everyday maintenance, Florida Telephone management recognizes the importance of quality tools and supplies that their line crews know and respect and which are quickly available from Graybar.



H. G. Williams, Equipment Maintenance man, stands before the Lynch B112 repeater bay in the Winter Garden Toll Center and Exchange Building which was constructed in 1954. These repeaters are used with a new cable recently installed between Apopka and Winter Garden to expand facilities to the Winter Garden Toll Center.

Here Graybar Salesman John Coleman and General Plant Supervisor and Purchasing Agent John Riggs, at right, interrupt their discussion of a list of telephone supplies ordered from Graybar to smile for the camera. Graybar's specialized services and experienced personnel have done much to cement the healthy relationship between it and the Florida Telephone Corporation.

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Courts and Commissions

Rates, Financing Approved For Two Alabama Companies

The rate schedules and financing plans of two Independents — the Oneonta Telephone Co. and the Ragland Telephone Co., Inc.—were recently approved by the Alabama Public Service Commission.

The Oneonta company was authorized to borrow $120,000 from the State National Bank of Decatur, Ala., repayable in 120 consecutive, equal monthly installments with interest on the balance at 4½ per cent. Proceeds are to be used to finance improvements. The following schedule of increased rates was approved and was expected to cover both operating expenses and part of the improvements:

One-party business	$7.00
Two-party business	5.50
Five-party business	4.50
One-party residence	4.50
Two-party residence	3.50
Five-party residence	2.50

*

The Ragland company was authorized to borrow $54,000 from Stromberg-Carlson Co. Purpose of the loan is to finance conversion to dial operation. The loan is to be paid off in 240 consecutive, equal monthly installments, and is to be secured by a first mortgage on all of the Ragland company's property. Dial service rates (TELEPHONY, Feb. 18, p. 40) are the following:

One party business	$7.00
Two-party business	5.50
Four-party business	4.50
One-party residence	5.00
Two-party residence	4.00
Four-party residence	3.50
Rural multi-party residence	3.50

Wisconsin Independent Gains Rate Increase

The North-West Telephone Co., Tomah, has been granted an increase in rates by the Wisconsin Public Service Commission, it was announced recently (TELEPHONY, Mar. 17, p.35).

Karl Mohr, general manager of the company, stated that in Tomah the average increase will be about 19 per cent.

The new rates went into effect on Mar. 1.

Mr. Mohr explained that the rate increases were needed to cover wage increases caused by the new minimum wage law that went into effect on Mar. 1.

The total raise authorized for the 16 exchanges is $101,559 annually.

North-West originally applied for the raise in October 1955, asking an increase of $143,261 a year, which would have provided 6.99 per cent, on a net investment cost rate base of $1,705,299. That would have provided a net annual income of $119,271.

However, the lesser increase authorized by the commission will provide a net operating income of $107,407 and a net increase of 6.27 per cent.

The rate increase is the first for the North-West company since 1952.

FCC OKs N.C.-Va. Coastal Radio-Telephone Service

The Federal Communications Commission has approved construction of a new marine radio station at Point Harbor, N. C., which will clear the way for improved radio-telephone service off the North Carolina and Virginia coasts.

The ship-to-shore telephone service is a joint project of Southern Bell Telephone & Telegraph Co., the Norfolk & Carolina Telephone & Telegraph Co., Elizabeth City, N. C., and the Chesapeake & Potomac Telephone Co. of Virginia.

Although the transmitter will be located in North Carolina, calls will be handled by Norfolk, Va., marine operators of the Chesapeake & Potomac company.

Georgia Commission Issues Four Authorizations

Four Independents—The Dalton Telephone Co., Walker County Telephone Co., LaFayette; Canton Telephone Co., and South Georgia Telephone Co., Sylvania—recently secured the following Georgia Public Service Commission authorizations:

Local service revenues for the Dalton company were increased $24,661.80 annually to $236,301.13. The company had requested a $43,824 annual raise. The commission determined that net operating revenues of $54,581.92 indicated a rate of return of 6.74 per cent on an investment of $810,038.59, which investment includes cash working capital.

Old and new rates for the Dalton company's Dalton, Cohutta and Tunnel Hill exchanges are:

	Old	*New*
One-party business	$6.50	$7.25
Two-party business	5.50	6.25
Four-party business	4.25	5.25
One-party residence	3.75	4.50
Two-party residence	3.25	3.75
Four-party residence	2.75	3.00
Rural multi-party:		
Business	3.50	4.00
Residence	2.75	3.00
For each additional 2 miles or fraction thereof beyond the base rate area	—	.25

*

Walker County company's rate raises involved increasing local service revenues by $2,871.24 to $76,678.19 annually. On the company's total investment, $274,380.58, net operating revenues of $17,393.81 represent a 6.34 per cent return. (The total investment figure includes the estimated cost of a new building—$16,520.)

The following are the old and the new rates:

	Old	*New*
One-party business	$6.50	$6.75
Two-party business	5.50	5.75
Four-party business	4.50	4.75
Multi-party business	3.50	3.50
One-party residence	4.00	4.25
Two-party residence	3.50	3.75
Four-party residence	3.00	3.00
Multi-party residence	2.50	2.50
Rural multi-party:		
Business, 0-2 miles	4.00	4.25
Residence, 0-2 miles	3.00	3.25

*

Canton Telephone Co.'s authorization was for sale of $325,000 of 20-year first mortgage bonds, bearing 4 per cent interest. The commission noted that, according to the evidence, the Canton company had a firm commit-

ment from J. H. Hilsman & Co., Inc., Atlanta, Ga., for the purchase of the bonds.

Proceeds from the sale of the bonds will be used to convert the Canton exchange to automatic operation, including construction of a new central office building and a 1400-line switchboard.

*

The South Georgia company on Feb. 28 secured authority to effect increased rates (approved on Dec. 15, 1955) at its Reidsville exchange now that service in that exchange has been found satisfactory by a commission representative.

Mo. Rate Raise Approved to Offset Minimum Wage Boost

The Missouri Public Service Commission on Mar. 9 granted an increase to the first of a reported nine telephone companies seeking to raise rates to offset the new $1.00 minimum wage law.

The commission authorized the Buffalo Telephone Co., to raise its rates $2,886 a year. The company said it would have to pay that much in higher salaries for six operators and a maintenance man under the new minimum wage law (effective Mar. 1).

The higher rates for Buffalo subscribers will be effective Mar. 20 under the commission order.

New York Independent Gains Increase in Rates

The New York Public Service Commission reported on Mar. 14 it has accepted a tariff amendment filed by Grace B. Holmes, doing business as Apalachin Telephone Co., designed to increase rates by about $4,250, effective Apr. 1. The company provides magneto service to about 450 stations in and near Apalachin and South Apalachin.

The company will offer a new two-party business and residence service.

In filing its new rates, the company said it had lost more than $1,300 in each of the past two years and that its operating expenses will be increased materially during the next year because of the necessity of hiring additional operators. This is its first rate change since 1950.

Asks N. D. Purchase OK

A hearing on the application of the Polar Rural Telephone Co., Grafton, to purchase the Glasston Mutual Telephone Co., the Edinburg & Gardar Telephone Co., Edinburg; the St. Thomas Rural Telephone Co., and the South Carlisle Telephone Co., Hamilton, was scheduled recently by the North Dakota Public Service Commission, according to Elmer Olson, secretary for the commission.

West Coast Company Sells Stock and Bond Issue

West Coast Telephone Co., Everett, Wash., has sold $3,500,000 of 3¾ per cent first mortgage bonds, due 1985, to New York Life Insurance Co., Continental Assurance Co. and Modern Woodmen of America, Chester H. Loveland, president, announced (TELEPHONY, Feb. 11, p. 36., Mar. 3, p. 28).

West Coast also sold 60,000 shares of $1.24 preferred, $25 par value to three insurance companies.

Independent Authorized to Buy Three Mo. Exchanges

The Missouri Public Service Commission on Mar. 2 authorized the Kingdom Telephone Co. to go ahead with a financing program and to purchase exchanges in three Callaway County towns — Mokane, Hatton and Auxvasse (TELEPHONY, Feb. 11, p. 34).

Kingdom would purchase the Hatton and Auxvasse exchanges from the Auxvasse Telephone Co.

Maryland's Anti-Strike Law Now Provides State Seizure

Maryland's new public utility anti-strike law was amended by a special state legislative session on Mar. 8 to give the governor the right to select arbitration board members in the event the disputants fail to do so. (TELEPHONY, Mar. 10, p. 46).

The act, which was used to end a Baltimore transit strike, provides for state seizure of utilities to halt or prevent disruption of service because of labor-management disputes and calls for compulsory arbitration of such disputes where other settlement efforts fail.

McHugh Testifies For Plant Value Rate Base

Incalculable damage would be done to the quality and scope of telephone service in New York State in years to come if the state legislature passes the New York Public Service Commission's proposed bill to wipe out consideration of the value of telephone plant in establishing rates, Keith S. McHugh, president of the New York Telephone Co., on Mar. 14 told the State Senate Finance Committee.

The hearings held by the Senate Committee stemmed from a resolution passed by the New York Legislature on Feb. 27, which would create a committee to investigate the subject of public utility rates and the methods employed to determine same (TELEPHONY, Mar. 10, p. 46).

This action was the result of the decision of the New York Public Service Commission in the New York Telephone Co. rate increase case. The commission turned down the company's $68,850,000 rate increase request and refused to reopen the case. This decision was appealed and the New York Court of Appeals subsequently held (TELEPHONY, Mar. 3, p. 17) that the commission must consider reproduction cost new in setting the rate base (see also TELEPHONY, Feb. 25, p. 36).

The commission bill would work an injustice on more than 100,000 telephone employes and on the 270,000 Bell System shareowners in this state who have invested in the business, Mr. McHugh asserted.

"The telephone business requires very large amounts of new capital to take care of growth and keep on giving good service," he said. "This year we expect to build 260 million dollars of new and improved plant. Almost none of this new capital comes from retained earnings because there are little or no retained earnings. We must raise this money from investors but we cannot unless we are financially sound, because the corporate and government search for new capital is as highly competitive as the selling of goods and services.

"Our company has had a small increase in rates. Our average telephone rates are up only 17-2/3 per cent since before the war, the lowest in any state. In the same period the cost of living is up 92 per cent."

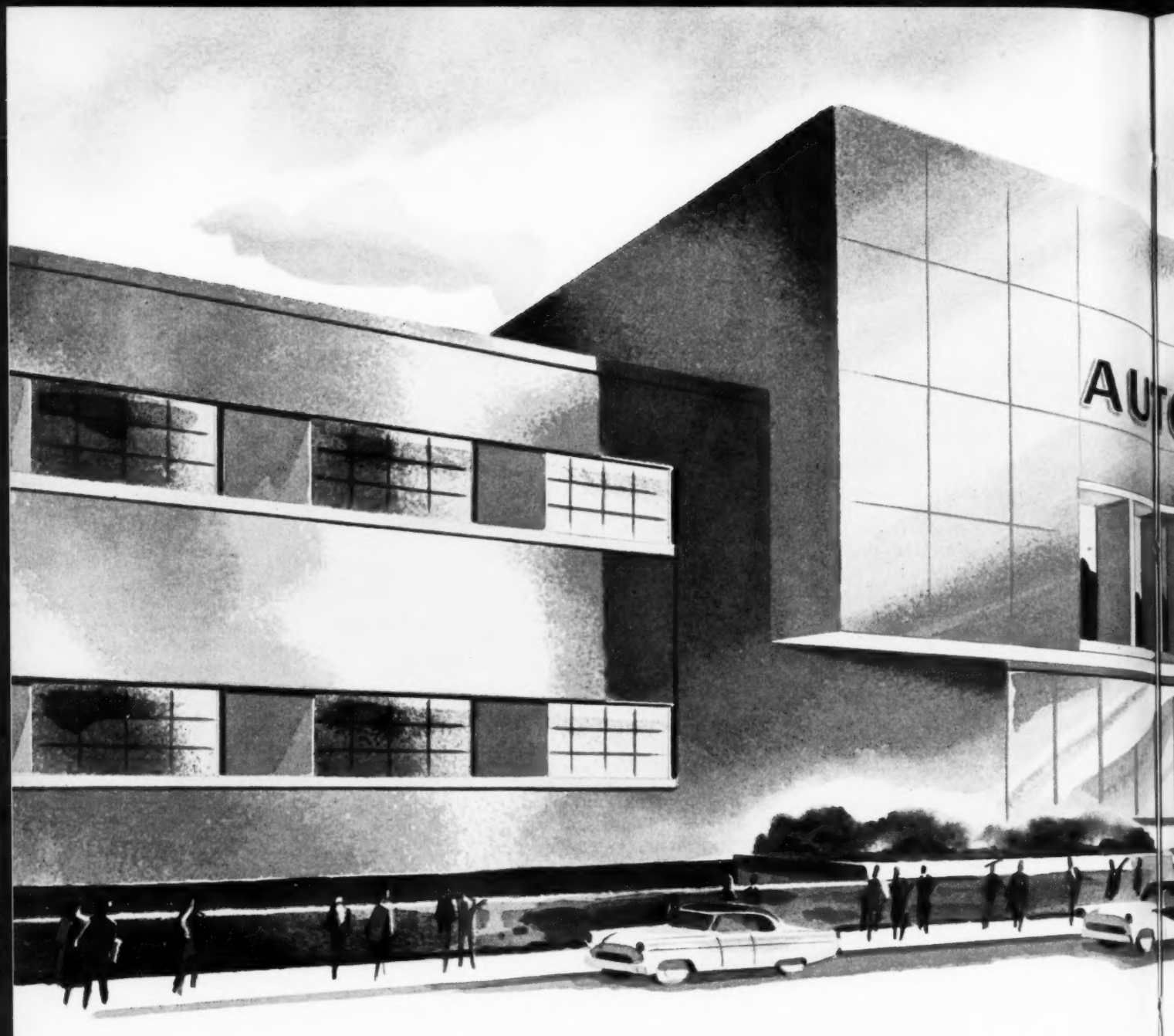
Mr. McHugh pointed out that since 1910 the state law has required that the New York commission, in setting rates for telephone service, give due regard to a reasonable average return on the value of the company's property. He indicated that the fact the commission has ignored this section of the law since 1944 is largely responsible for the company's inadequate rates and unsatisfactory earnings.

In nine of the last 15 years the New York Telephone Co. has failed to earn enough to cover its regular dividend, he said.

"Use of a value base has never meant run-away telephone rates. We have never sought and will not seek returns higher than those essential for financial safety," he declared.

"What we are contending for here is the fundamental right to do business on the same basis as all other business is done—the right to have the current worth of our large investment recognized," he said. "We have faced and met the same rounds of wage increases as other businesses, the same increases in material costs and in construction

(Please turn to page 34)



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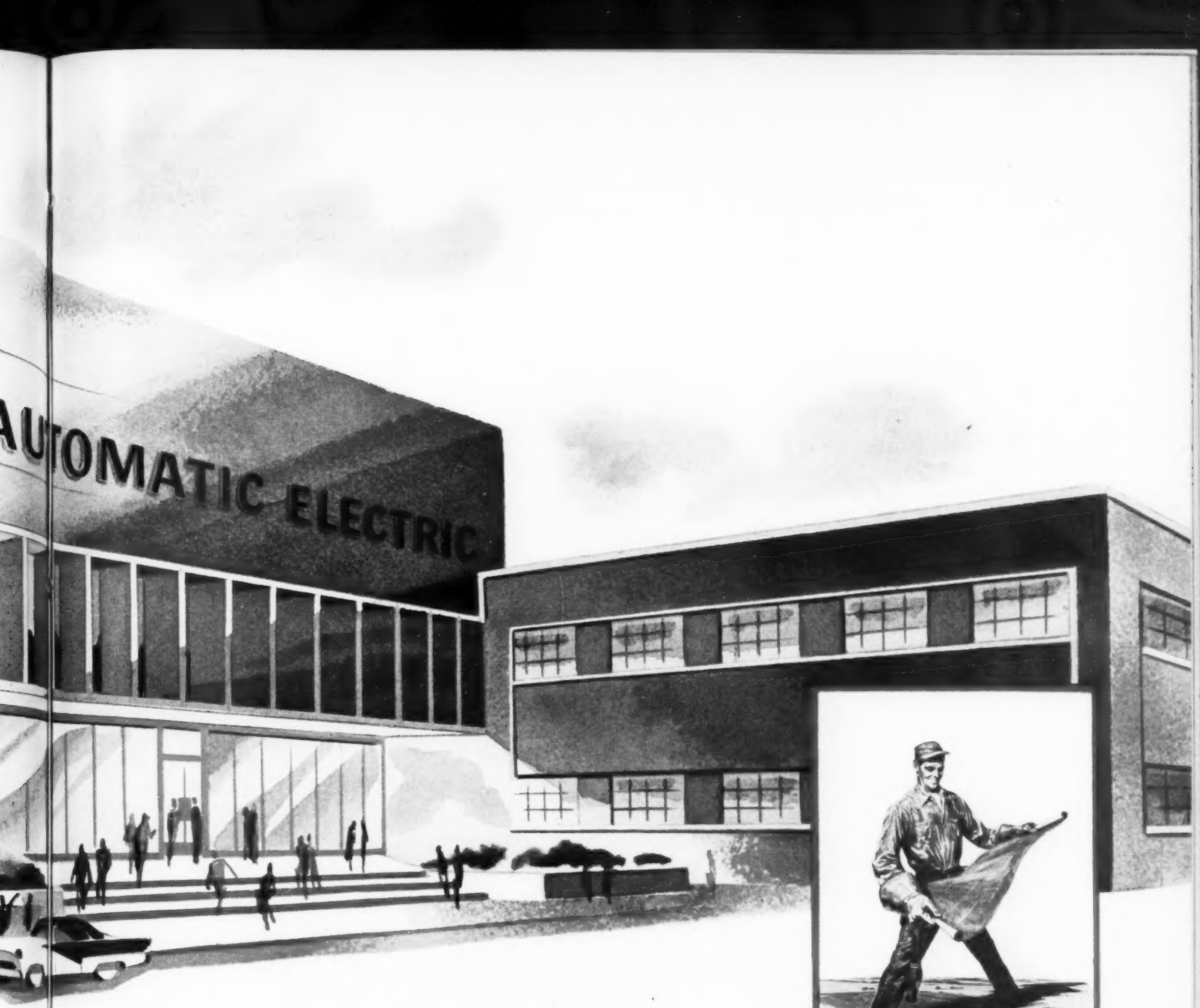
This new, multi-million dollar plant will be completed in 1957. Modern-as-tomorrow facilities will enable us to supply telephone equipment that will set new high standards. Stream-



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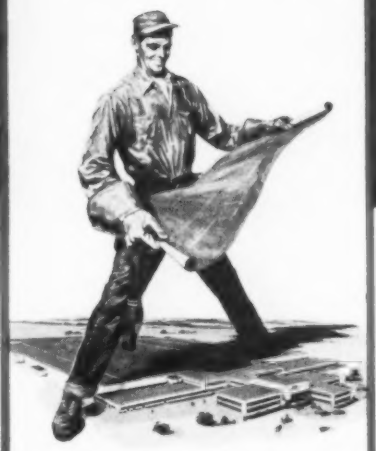
lined, straight-line production will give us much greater capacity to meet the increasing demands of our industry.

And...for the future...our greatly enlarged laboratory and research facilities will hasten the arrival of new telephone developments...so you can better serve our growing telephone population.



Quick Facts About America's Most Modern Telephone Plant

- 170-acre plant site permitting extensive future expansion
- 15 miles from downtown Chicago
- Will employ more than 6,000
- 1,300,000 square feet of floor space...29 acres
- Research, development laboratories, administrative, engineering and sales offices occupy 7 acres
- Straight-line, one floor production flow
- Parking area to accommodate 3,000 cars

AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

GENERAL SYSTEM

INDEPENDENT

XUM

costs. Why then does anyone expect that the telephone company, faced with great growth and improvement problems requiring very large sums of new capital, can somehow manage without proper increases in the prices of its services?"

Sound financial health is required if the company is to finance successfully its big construction programs, Mr. McHugh said.

"So long as the thoughtful telephone investor thinks his savings are safe, that he can get a fair return on his money and that the future of the business looks good he will not only leave his savings in the business but he may add more to it as it needs capital to expand. But you may be equally sure that the informed investor will do neither of these things if he becomes convinced that the future looks doubtful and risky."

He reminded the members of the committee that "our corporate credit is like your personal credit—you only have to have serious doubts raised about it to find that you no longer have it. It does little good to say that past security issues have been successful. The important question is about those to come. Should the tremendous flow of new money we need cease or be curtailed substantially, it would be a sad day for all telephone users."

Mr. McHugh said that there are "important economic differences" between the telephone companies and the power companies. He stated:

"Telephone earnings are more vulnerable; the man who loses his job may discontinue his telephone service in the emergency, but rarely his electric power. The telephone company invests large amounts in the equipment on the customer's premises; but the customer provides his own electric appliances.

"Telephone company costs tend to increase, the more people it has to provide ways of interconnecting; power companies have no such problem of interconnecting customers.

"Furthermore, 41 cents of every revenue dollar goes to labor in the telephone company; only 19 cents in the average power company.

"We can give the people of our state any kind of service they are willing to pay for, but we cannot give them the best service year in and year out unless they pay enough to make the best service possible.

"Unless we are permitted modestly better rates, unless our investors are given some protection against major and permanent changes in construction prices, it is only a question of time before there is bound to be deterioration in our ability to serve you."

Asks Rate Increase in Wis.

The Wisconsin Public Service Commission was to have heard on Mar. 20 the application of the Luck Telephone Co. for authority to increase rates.

Ohio Independent Ordered To Give Private Line Service

Commercial Motor Freight, Inc., requested the Ohio Public Utilities Commission to require the Chillicothe Telephone Co., the Ohio Bell Telephone Co. and the Ohio Consolidated Telephone Co., Portsmouth, together with two other companies which were subsequently dismissed, to furnish necessary facilities to connect Commercial's offices at Chillicothe and Portsmouth to their private line service in operation at Commercial's offices in Columbus, Newark, Zanesville and Lancaster.

After several hearings wherein Ohio Bell and Ohio Consolidated indicated a willingness to render the requested service and the Chillicothe company indicated a reluctance to furnish such service, the commission ordered the Chillicothe company to file appropriate tariffs and hold itself out to serve private line service. Chillicothe Telephone Co. then filed its application for rehearing which was denied, and the case was remanded to the Supreme Court of Ohio, which court subsequently affirmed the commission's order.

Ohio Bell Telephone Co. and Ohio Consolidated Telephone Co. have had tariffs on file with the commission and, following the supreme court's decision, the Chillicothe company filed tariffs covering this service.

Because of delay in Commercial Motor Freight's receiving the desired service, further conferences were held between the participating parties in which it developed that Ohio Bell desired to connect its interexchange circuits to the Chillicothe company's local channels at the Chillicothe company's central office; and the Chillicothe company desired to connect the circuits to Ohio Bell's interexchange circuits at the point where Bell's circuits enter the Chillicothe company's exchange area.

The Ohio Bell company indicated that if the Chillicothe company's plan was followed, it would involve considerable costly construction and if their own plan was followed, no construction would be necessary and service could be furnished promptly.

The record of the case discloses that 87 out of 88 Independent telephone companies in the state of Ohio have agreed to participate in the furnishing of private line service under contracts with Ohio Bell that are similar to Ohio Bell's proposal in the manner of connections in this case.

The commission is of the opinion that if the Chillicothe company and Ohio Bell were unable to agree with respect to the manner in which the ordered service should be furnished and the plans by which their respective facilities should be connected, then such determination should be made by the commission. However, the legal record in the proceeding discloses that there is insufficient evidence upon which to base such a determination.

The commission then set the matter down for further hearing. However, during the interim, the two companies were ordered to render the service within 14 days and follow the Ohio Bell company's plan in connecting the facilities.

•

The Lorain Telephone Co. received the commission's authority to issue and sell for cash, to the residents of the state of Ohio only, 5000 shares of its 5 per cent preferred stock at a price of $102 per share, aggregating a total of $510,000, the proceeds of which are to be used to reimburse applicants treasury for capital expenditures.

•

The Petersburg Telephone Co., an unincorporated mutual telephone company, through its members, recently executed a deed of conveyance of all of their right, title and interest in all of the property owned by them and used in connection with the Petersburg Telephone Co. to General Telephone Co. of Ohio.

The Petersburg company's area is to be added to the Carrollton exchange of General of Ohio.

•

Through a joint agreement between General Telephone Co. of Ohio and the Ohio Bell Telephone Co., which received the Commission's approval, Chili exchange subscribers of General of Ohio are to be transferred to Ohio Bell's Coshocton and West Lafayette exchanges as soon as Ohio Bell can install necessary plant and facilities.

The two companies are of the opinion that, because the limited service development within the Chili exchange area makes the operation of the Chili exchange by General uneconomical and also, in view of the expressed community of interest of the residents of this territory with subscribers of the Coshocton and West Lafayette exchanges of Bell, the transfer of territory should be made.

The General Telephone Co. of Ohio plans to discontinue its Chili exchange as a separate exchange following installation of plant and facilities by Ohio Bell.

•

In the interest of more fully satisfy-

ing customer requirements, the Cincinnati & Suburban Bell Telephone Co. proposes to establish regulations and rates for colored telephones of key type, a new service offering; to establish a differential installation charge for the substitution of a colored telephone for an existing colored telephone where the installation charge specified for the replacing telephone exceeds that for the replaced telephone; and to discontinue the application of the installation charge for replacing a colored telephone in the same color finish for maintenance reasons.

Advertising Directory Suit Names Michigan Bell

Plumbing-heating contractors in Flint, Mich., have filed suit asking that the Michigan Bell Telephone Co. be forbidden to advertise unqualified craftsmen as "licensed master plumbers" in the yellow pages of its telephone directory.

Sewer-cleaning establishments were a specific target of the complaint, although it was broad enough to include any unlicensed person or company. A circuit judge signed an order asking telephone company officials to appear to answer the complaint, giving reasons why an injunction should not be issued to forbid such advertising in the classified telephone directory.

The bill of complaint charged that plumbing codes provide that "no person shall work at the business of a master plumber or journeyman plumber . . . unless licensed to do so by the plumbing board of a city or village."

Many persons who are not master plumbers or journeymen, the complaint said, are advertising themselves as such in the telephone directory. This "wrongful classification" leads to abuses by certain firms, to the detriment of licensed plumbers.

Missouri Independent Asks Increase in Rates

McKrae Telephone Co., Kansas City, Mo., on Mar. 13 asked for a rate increase totaling $25,581 in 13 Southeast Kansas towns.

Lloyd Shank, chief engineer for the Kansas Corporation Commission utilities division, said the application cited higher costs as a result of the new $1.00 hourly minimum wage under federal law.

Neb. Company Incorporates

Corkscrew Telephone Co., with authorized capital of $7,500, filed articles of incorporation with the Nebraska Secretary of State, it was reported recently. The home office is Crawford, where all of the incorporators live.

They are: Earl D. Martin, John C. Vastine, Leslie M. Moyer, Marvin Bauer, Fisher Gillette.

SW Bell to Take Over Small Kansas Independent

The Kansas Corporation Commission authorized Southwestern Bell Telephone Co. on Mar. 14 to take over the territory southwest of Topeka now served by the Auburn-Vidette Mutual Telephone Co.

At the same time, the commission authorized the Auburn company to cease business.

Bell plans temporarily to use the present switchboard and magneto telephones, while making a survey to see if community dial operations would be practical in about two years.

The Auburn company, serving about 150 customers, has been in receivership. Pearl Maus, Topeka, the receiver, was appointed because several stockholders in the mutual company could not be found. The receiver was named to act for them in the transaction.

Dial Service Rate Schedule Approved for Fla. Company

The Florida Railroad & Public Utilities Commission on Mar. 9 approved temporary rate increases for the West Florida Telephone Co., Marianna, effective upon conversion to automatic (TELEPHONY, Jan. 14, p. 38).

In the meantime, the West Florida company may put into effect the temporary rates after first filing a $25,000 bond with the commission. The bond is to be used to refund to subscribers any difference between the approved temporary increased rates and such rates as may finally be determined by the commission to be lawful for the period from the time the temporary increased rates and charges are placed into effect by the West Florida company and the date of such final determination.

Fla. Company with REA Loan Gains Dial Service Rates

A Florida Independent with an REA loan, the Tri-County Telephone Co., on Mar. 5 was granted a schedule of rates for dial service to be effective in each of the companies exchanges as they are cut over to automatic.

In its order, the Florida Railroad & Public Utilities Commission noted:

"The applicant is engaged in a considerable expansion program within its territory and, in order to finance such expansion, has secured an allocation of $1,007,000 from the Rural Electrification Administration of the federal government.

"The applicant's expansion program contemplates a complete and modern telephone plant serving approximately 1591 rural families within an area of 812 square miles in addition to some 760 subscribers presently being served by applicant within said territory.

"The utility presently operates telephone exchanges in Bonifay, Grand Ridge, Sneads, and Cottondale. Service will be furnished by means of a modern dial system."

Approved rates for dial service:

One-party business	$8.00
Two-party business	7.00
Four-party business	6.00
Multi-party business	5.50
One-party residence	5.00
Two-party residence	4.00
Four-party residence	3.00
Multi-party residence	3.50
For graded service: Mileage per ¼ mile (plus rent).	
One-party (add)	$ .42
Two-party (add)	.21
Four-party (add)	.11

N.C. Company Withdraws Rate Increase Request

The North Carolina Utilities Commission, on March 15 granted a request of the Randolph Telephone Co. of Liberty that the company's application for a rate increase be withdrawn (TELEPHONY, Feb. 25, p. 30).

The application was withdrawn "without prejudice" in case the company decides to renew it later.

Ark. Commission Orders Rate Increase Suspended

The Public Service Commission at Little Rock suspended for 90 days the proposed rate increase filed recently by Arkansas Associated Telephone Co., Leachville, which serves a number of East Arkansas towns.

The new rates, scheduled to go into effect Mar. 1, were ordered suspended pending a hearing.

SW Bell Names M. B. Smith To Managerial Post

M. B. Smith, assistant general manager for Southwestern Bell Telephone Co. in Texas, has been appointed general merchandising manager for the company, with headquarters in St. Louis, Mo.

Mr. Smith began his telephone career in 1924 and held various jobs in the company's directory sales organization in Missouri before going to Dallas in 1936. He was made directory sales manager in Texas in 1940 and in 1941 was named manager for the Southwest Texas division.

He became general commercial manager for Texas in 1950 and in 1952 was named to his present post.

XUM

THE MOST IMPORTANT FACTOR IN TELEPHONE SWITCHING . . . .

" . . . calls switched per man-hour of maintenance". This is the most important measure of value in telephone switching equipment. Elementary, one might add—yet a prettily priced proposal often causes such long-range evaluation to be overlooked.

North pioneered the All-Relay principle of switching more than a generation ago because it held the promise of "more calls per man-hour of maintenance" than does mechanical switching. It is a promise inherent in the swift, quiet, wear-free operation of these simple relays . . . . . .

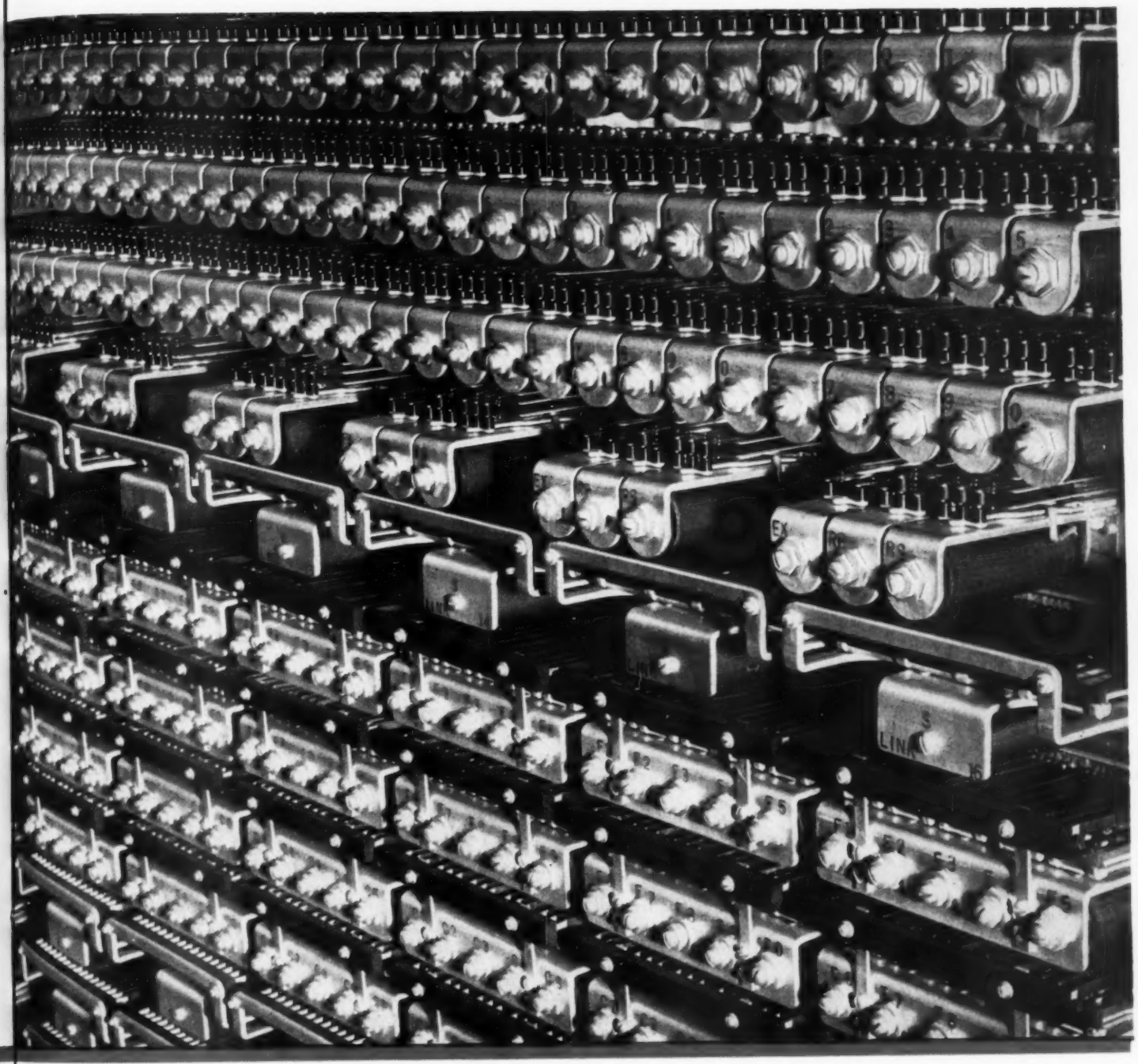
Owners of North exchanges testify that this promise of performance has been profitably fulfilled on every line of All-Relay they installed. Some of them have more than thirty years of experience to prove it.

If the growth of communication requirements in your community is steady and foreseeable North CX switchboards can be engineered to expand in planned stages. If greater flexibility is your need, specify the "Jack-in" type.

In either case the North representative in your area would like an opportunity to show you how the all-important factor of performance per man-hour of maintenance pays off in

All-Relay

Telephone Systems with or without "



t "JACK-IN"

The heart of "All-Relay". This is a typical group of the North relays which reduce mechanical wear in telephone switching to a minimum.

Available in Canada through ERICSSON TELEPHONE SALES of CANADA, Ltd. 1410 Stanley Street Montreal 2, P.Q.

NORTH ELECTRIC COMPANY

601 South Market Street, Galion, Ohio

XUM

"BUSH PHONES" OF ALASKA

Continued from page 22

have been saved by its use, and the degree to which it has facilitated business activities in an otherwise isolated part of the world, cannot be overestimated. Space here will permit mention of only a few of the numerous recent cases on record in which the "Bush phones" have played an important part in the lives of the good citizens of this far-north country.

The Department of Territorial Police reported as follows on the assistance of radio-telephone operators in connection with a crash of a Coast Guard amphibian "Albatross" plane on Dec. 14, 1954 in Portage Bay at Haines, Alaska:

"I wish to express my appreciation to the Alaska Communication System's personnel under the direction of Sgt. Walter O. Ebbett for the excellent job done in regard to handling of communications from this area. The ACS personnel did the finest job that any group of persons could possibly do. These men stayed at the switchboard and radio constantly until about 5 a.m. the following morning giving the best of service. The work of Sgt. Gene Martin in securing and placing in operation extension telephones for use of the survivors in calling their families from their hospital beds should not go unnoticed."

The following is quoted from a letter written by the editor of the Fairbanks *Daily News-Miner* to Col. M. R. Kunitz, present commanding officer of the Alaska Communication System, after the last territorial election:

"We are especially grateful to you for the wonderful way in which the Fairbanks ACS officer handled traffic election night when telegrams addressed to us were coming from many outlying points in the 'bush.' Thanks to the fine facilities and capable personnel of your organization, we were able to bring in returns from the remote corners of the vast Fourth Division of Alaska much faster, in many instances, than we were able to gather returns from our own local precincts."

We quote the following from the log of the Alaska Communication Service "Bush phone" operator at Fairbanks on the evening of Sept. 9, 1954:

"Approximately 100810Z, the regular 'Bush phone' schedule was interrupted by an emergency transmission from a Mrs. Luck Sackett, 'Bush phone' operator at KWX68 Huslia, Alaska. Mrs. Mary Davis, ALC Fairbanks 'Bush phone' operator, was advised that a Marianne Vifelt, seven-year-old resident of Huslia, had been seriously injured and that medical treatment was required at the earliset possible moment."

The following story was printed the next day in the Fairbanks *Daily News-Miner:*

"Thursday evening a tree fell on seven-year-old Marianne Vifelt, of the tiny village of Huslia, and severely gashed her head. Alaska Communication System officials were notified by the local school teacher. Don Stickman, bush pilot of Galena, was radioed to attempt a landing to transport Marianne to the hospital at Tanana. A medical technician from the military post at Galena accompanied Stickman.

"The air strip at Huslia is very small and unpaved. Stickman was able to make his midnight landing only because half the community of Huslia turned out to help light the strip by building fires. There is no electricity in the village. Once out of Huslia, Stickman was unable to land at Tanana because of the weather. He returned to Galena where the medical technician administered emergency aid to Marianne. In the interim, however, the weather lifted and the patient was flown into Tanana."

There is little doubt that some of the finest people in the world live in Alaska. They believe in, and practice, the Golden Rule. When any one of

RARE GAS RELAY KILLS INTERFERENCE!

OVER 1/4 MILLION IN USE!

Party Line Transmission and Ringing Improved with Vincent Rare Gas Relay RTC-2

HERE ARE THE FEATURES:

1. Ends all objectionable noise.
2. Prohibits false ringing.
3. Easily installed in all types of equipment.
4. Lightning protection.
5. Non-mechanical, no maintenance.
6. May be used with harmonic or coded bells.
7. May be used on magneto or common battery lines.

$3.62 LIST PRICE

THE THEORY OF OPERATION —

Since the resistance of the relay is infinity below 60 volts, (The relay's normal breakdown voltage) the line remains normally free from paths to ground. Ringing voltages of over 60 volts ionizes the rare inert gases, and therefore is transmitted without difficulty.

FREE: **TECHNICAL BULLETIN, WRITE DEPT. 48-A.**

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their number suffers a misfortune, the others immediately furnish all possible assistance without thought of personal danger or reward. Furthermore, they make an all-out effort to utilize available facilities to provide the required relief. These facilities may involve snow shoes, dog sleds, snowmobiles or airplanes. The activities during any emergency are usually directed and coordinated through the facilities of the Alaska Communication System and probably the "Bush phones." We seriously doubt that there is another place on earth where communication plays a more important part in the daily lives of the people.

IN THE NATION'S CAPITAL

Continued from page 19

"leased wires, teletypewriters, and talking circuit special services" a new tax would be imposed on "wire mileage." The base of the proposed new tax on wire mileage would be radio and wire circuits furnished by and obtainable only from communications common carriers. The base of this tax would not include services taxable as local or toll telephone service, telegraph service, or teletypewriter exchange service. The base of this tax would include much of what is presently treated as a leased wire or talking circuit special service, but would include only the charge for the wire mileage, and not the charge for terminal facilities; added to the base of this tax would be leased wires in a local exchange area, which are presently treated as local telephone service. On the other hand, what might be called interior communications systems, for example, wires leased from a telephone company, which do not go outside of a building and do not make use of public rights-of-way with respect to which the telephone company has an exclusive franchise, would be excluded from the base of the wire mileage tax, although such services when leased are subject to tax under present law.

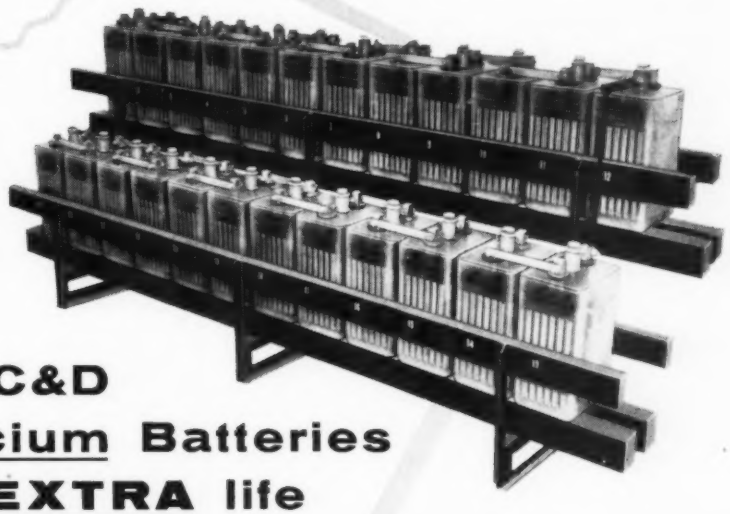
(6) The base of the present 8 per cent tax on wire and equipment service would be revised to exclude "interior communication services," that is, those not making use of the franchises of communication common carriers for carrying wires along or over public rights-of-way. This would remove from tax, fire-alarm and burglar-alarm systems, which are wired to give an alarm only on the subscriber's premises, as well as other types of purely interior communications systems.

(7) The method of computing the communications excise taxes now appears to require a single tax computation for all items included in a single bill. A collecting agency would be permitted to make the tax computation on totals by groups of items or on specific items normally associated together for billing purposes.

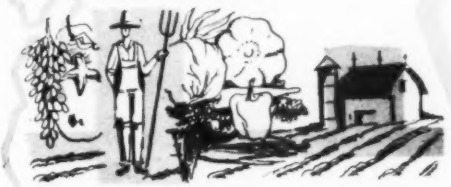
To Be Just With All Men

"Pity and forbearance should characterize all acts of justice."—FRANKLIN.

at Delta Telephone and Telegraph Co.



It's C&D Calcium Batteries for EXTRA life



One of C&D's typical installations in use at the Delta Telephone and Telegraph Co., Courtland, Calif. The 24 PlastiCal (lead-calcium) cells, Type PCE-420, have a 420 A.H. capacity.

In the growing community of Courtland, California, the Delta Telephone and Telegraph Co. relies on the continuous, dependable service provided by C&D PlastiCal batteries. For here, in the historic Delta region, the Delta Telephone and Telegraph Co. has found that C&D has the answer to telephone battery needs.

When you order your next telephone battery, specify C&D. For with C&D, you get:

1. One-piece, permanently-sealed plastic case. Entire unit is shock-resistant, lighter, and more compact than glass or rubber.
2. Exclusive suspended and supported plate construction eliminates leaks due to internal stresses.
3. Easier maintenance, because patented Post Seal eliminates acid creepage.
4. Lower shipping costs. Light plastic case reduces total in-place cost.

You can order C&D batteries from your equipment supplier.

Write for bulletins!

For details and specifications on C&D telephone batteries, write for Bulletins T-527 and T-528.

C&D BATTERIES, INC.
of Conshohocken, Pa.

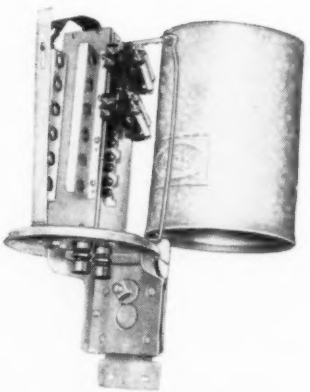
Manufacturers of Industrial Batteries since 1908

Sales and Service Offices in Principal Cities from Coast to Coast

CHECK THE ADVANTAGES AND YOU WILL

VOTE for line supplies from KELLOGG

The Key to Clear Party Lines — ideal method for getting a misplaced receiver on the hook without making a service call. The signal tone produced by the Lorain Howler is distinctive, demanding attention; it is loud, yet safe. LORAIN PRODUCTS CORPORATION.



For Use with Plastic Cable—The S-20V protected or unprotected terminal has 2 cable entrances, arranged to take any size of compression coupling from 6 to 51 pair. Pipe Plug inserted when one cable entrance is required. A product of COOK ELECTRIC COMPANY.

Save Three Ways . . . on materials, man-hours and maintenance with INDIANA STEEL & WIRE COMPANY'S Crapo HTL-85 and HTL-135 Line Wire. Galvanized by the famous Crapo Galvanizing process, protected with heavy, ductile coating of zinc.

Extra-Life Telephone Battery — Plasti-Cal (lead calcium grids) have expected life of 25 years in full-float service. Plasti-Cell (high tensile special alloy grids) have a life expectancy of 14 years. Made by C&D BATTERIES, INC.

Here's the Kellogg Platform!

- Top-quality line supplies
- Quick delivery
- Experienced telephone men handle your order
- All your needs from one source

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KELLOGG SWITCHBOARD AND SUPPLY COMPANY
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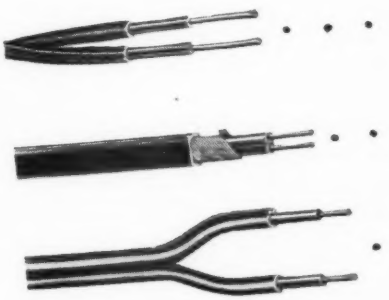
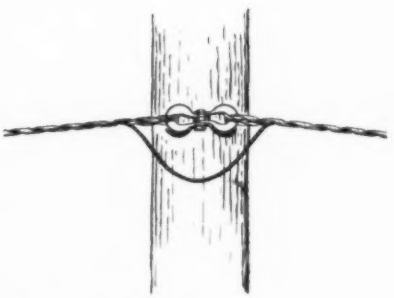
Sales Offices: 79 W. Monroe St., Chicago 3, Ill.

Telephone Booths — Constructed of the finest panel steel, safety glass and aluminum—it's built to last for many years. Construction is so simple that even a beginner can put it up in less than two hours. BENNER NAWMAN, INC.

Complete Line of Hardware to meet all outside telephone plant requirements. Joslyn's convenient package of small hardware — like round washers shown above—promotes better "housekeeping" in the storeroom and on the line truck. JOSLYN.



Afraid of Winter? Keep your lines in action — your maintenance costs down, with DIAMOND WIRE & CABLE CO.'s RED-D Drop Wire. Superior adhesion, conductivity, tensile strength. Available in Copperweld and Signal Bronze.



Preformed Dead-Ends for Self-Supporting Plastic Cable. Both long and short dead-ends available. Easily applied without the use of special tools. Merely slip one leg through a standard hardware thimble clevis and wrap the legs around the cable. PREFORMED LINE PRODUCTS CO.

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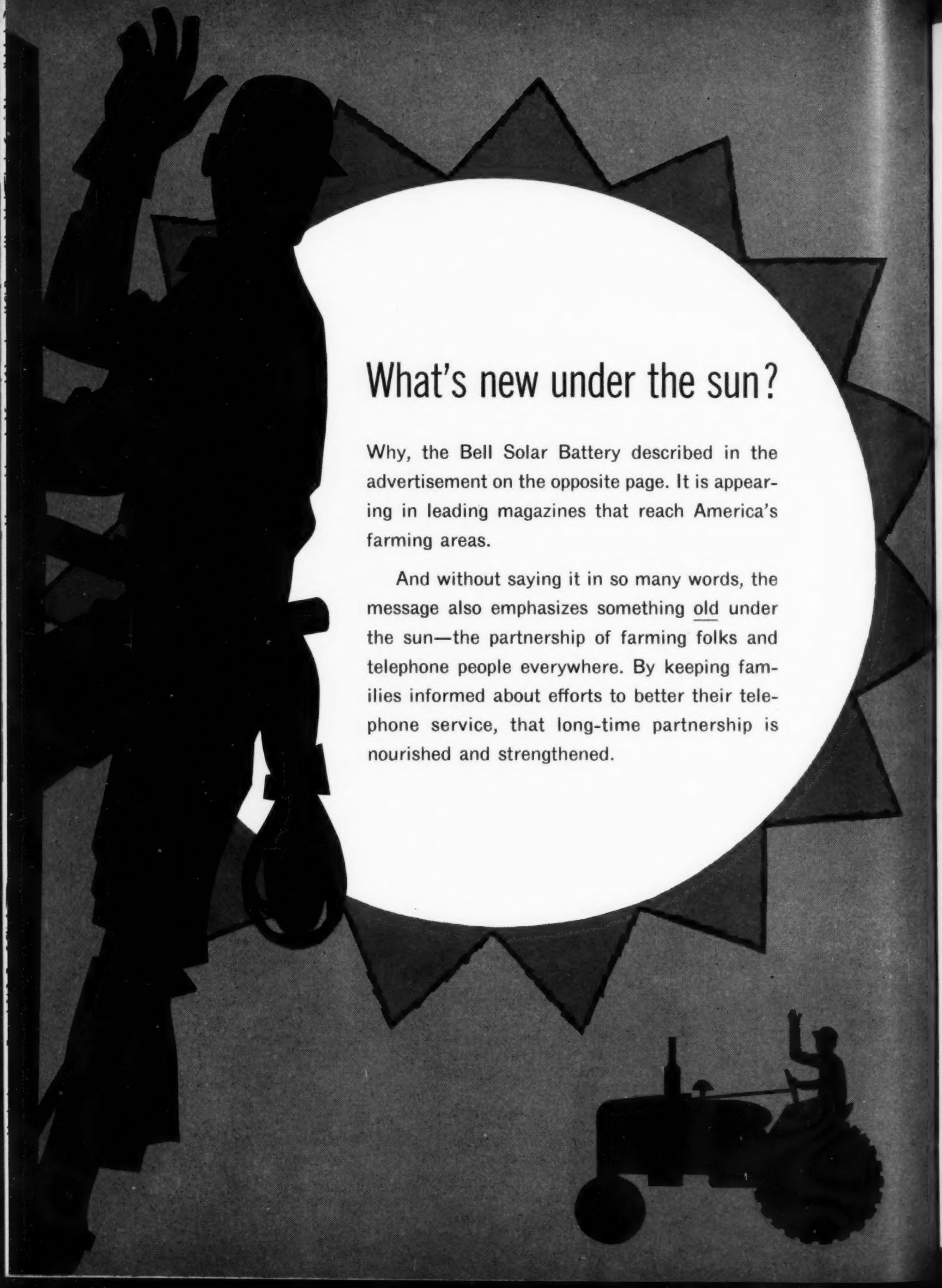
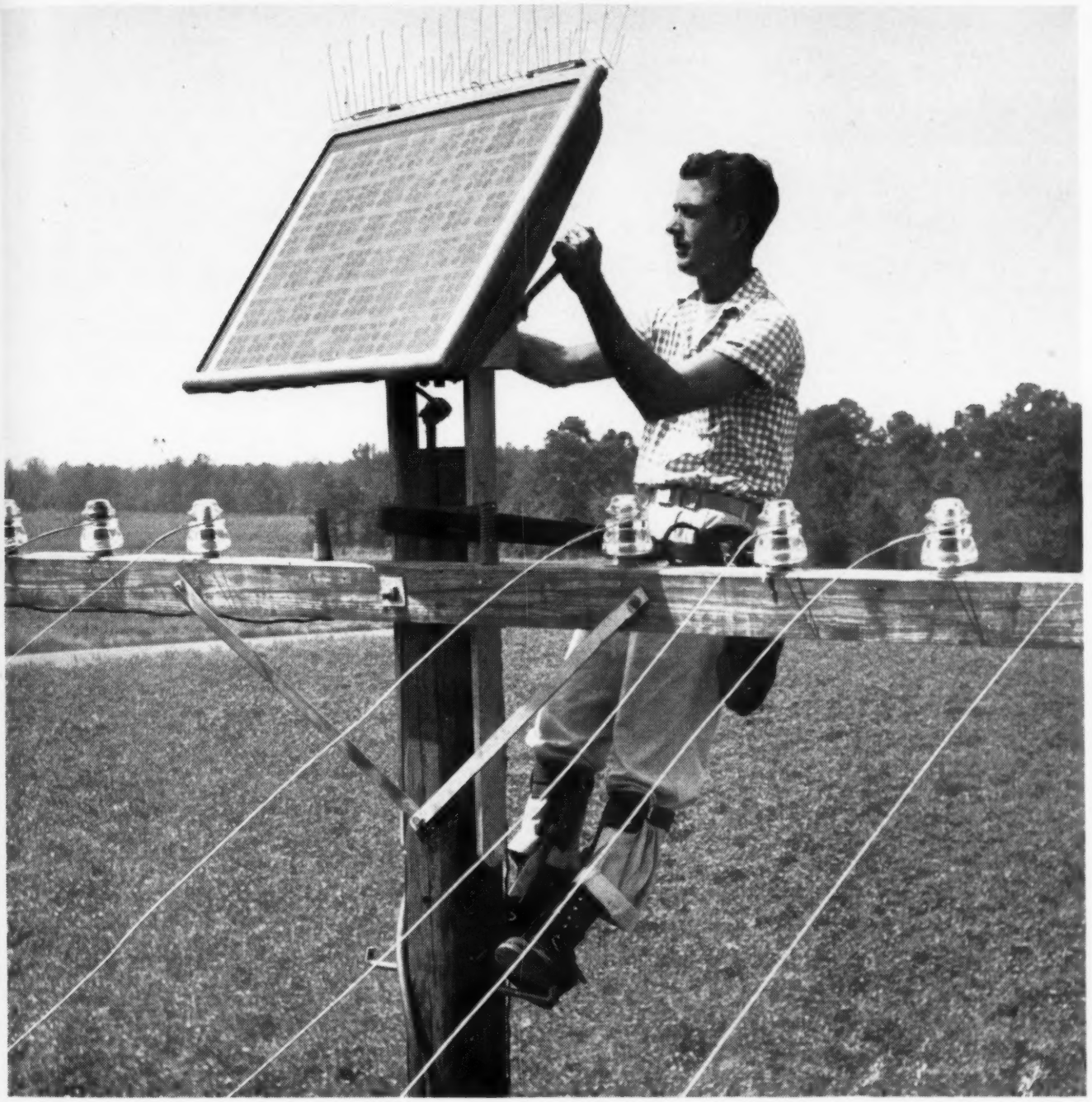


What's new under the sun?

Why, the Bell Solar Battery described in the advertisement on the opposite page. It is appearing in leading magazines that reach America's farming areas.

And without saying it in so many words, the message also emphasizes something old under the sun—the partnership of farming folks and telephone people everywhere. By keeping families informed about efforts to better their telephone service, that long-time partnership is nourished and strengthened.



A Bell Solar Battery is put into place on a telephone pole in a cotton field in Americus, Ga. This battery, which converts the sun's energy directly into electricity, is being used to provide power for an experimental telephone line serving rural customers.

A rural telephone system that works on sunlight

A rural telephone system in Americus, Ga., is getting its power from the same source which helps the peanuts, cotton, pecans and peaches flourish—*the sun*.

A Bell Solar Battery—a recent invention of Bell Telephone Laboratories—is placed at the top of a telephone pole. It converts the light of the sun directly into electricity, which provides power to carry conversations on telephone lines.

In the daytime, excess power is fed into a storage battery to operate the line at night and during bad weather. The Solar Battery is so simple—no moving parts or corrosive chemicals—that it should last indefinitely.

Result of the sun-powered rural telephone line experiment in Americus is being watched closely by telephone men everywhere. For it is another important step in Bell System's continuing search for new methods and materials that are extending and improving rural telephone service.

BELL TELEPHONE SYSTEM

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TAKE A BIG STEP TOWARD SAFETY WITH DUO-SAFETY LADDERS

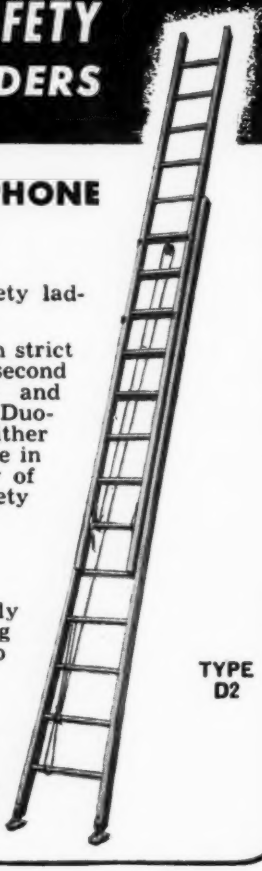
... CUSTOM DESIGNED FOR TELEPHONE MAINTENANCE WORK!

Here's one fine example of the many Duo-Safety ladders ideal for telephone maintenance work.

Type D — a truly great extension ladder built in strict accordance with safety regulations. Rungs are second growth hickory, reinforced with steel rods and equipped with special automatic locks and Duo-Safety's famous Safety Shoes. Made with either straight or parallel side rails, Type D is available in one, two or three sections — in a large variety of sizes. Write for free catalog on all Duo-Safety ladders.

IMMEDIATE DELIVERIES!

Duo-Safety ladders will be shipped immediately upon receipt of order! A planned stock-piling program assures really fast action — there's no delay the Duo-Safety way!



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DUO-SAFETY LADDER CORP.
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Telephone, Power, Lighting and Alarm Circuits . . .

RUN SIDE-BY-SIDE IN OCT-O-DUCT

In the same trench, Soapstone OCT-O-DUCT is carrying primary and secondary telephone, primary and secondary power, street lighting and fire alarm circuits for the new, $50 million industrial, commercial and residential Trousdale Development 17 miles south of San Francisco.

OCT-O-DUCT's flat sides, convenient length and diameters, and its outstanding electrical, chemical and mechanical characteristics make it the natural choice for complicated set-ups like this, where installation speed, economy and long life are essential.

To find out how OCT-O-DUCT can save *you* time . . . money . . . work, send for *Specification Bulletin 54-A*, and *Installation Manual 54-B.*

SOAPSTONE DUCT COMPANY
110 Linfield Drive, Menlo Park, California

C. L. Spaid, President of Missouri Association, Dies

CARL L. SPAID, 61, president of the United Telephone Co. of Missouri and Kansas died of a heart attack in Jefferson City, on Mar. 9 (TELEPHONY, Mar. 17, p. 40). He had gone to Jefferson City to attend a meeting of the Missouri Telephone Association, of which he was president.

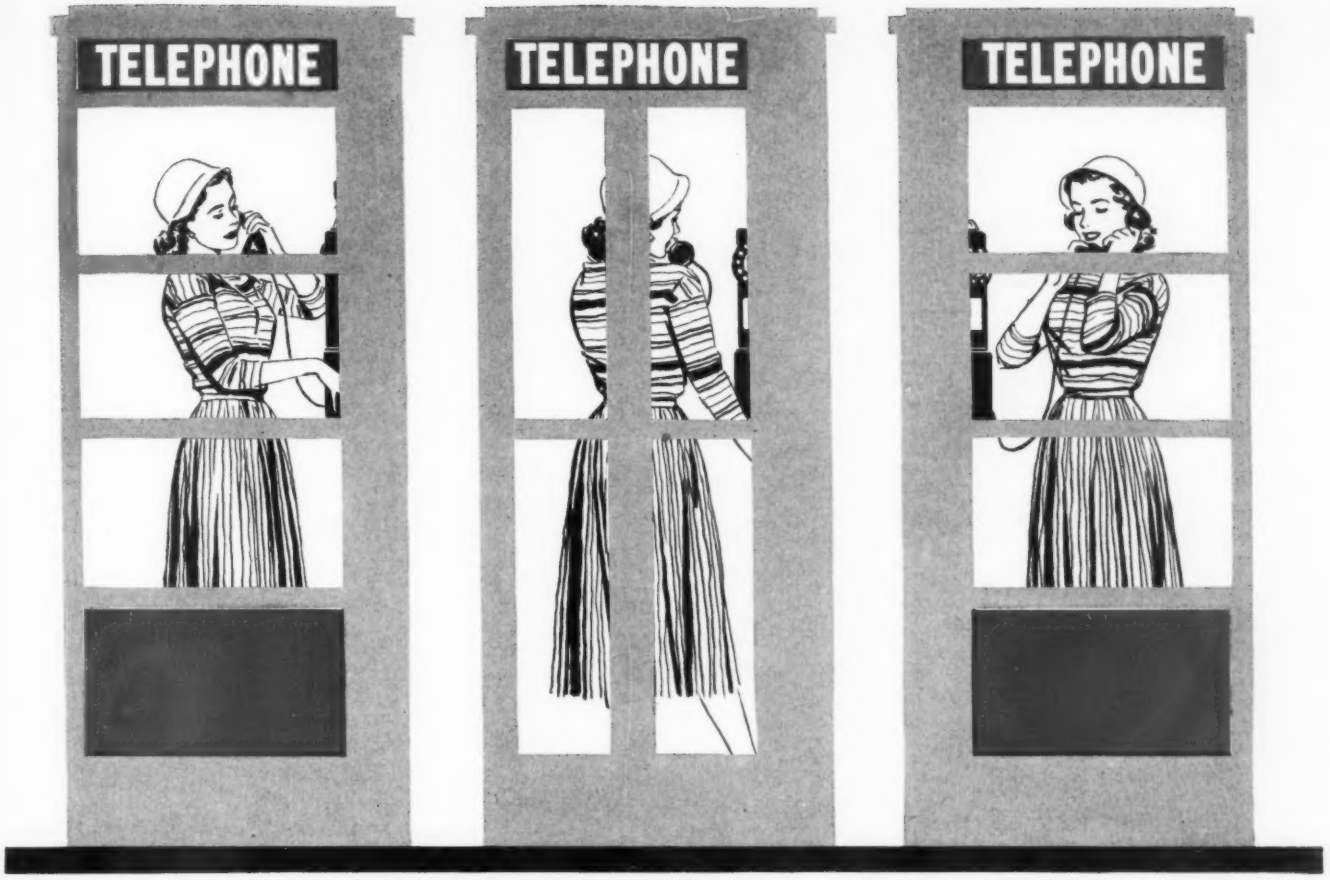
He had been in the Independent telephone business since 1914 when he began as a cableman's helper in Joplin, Mo. He became associated with the United companies in 1925. He had been president of the United of Missouri, Kansas, Arkansas Associated, McKrae and Siloam Springs Telephone Cos. since 1940. He attended the University of Missouri and was a World War I veteran. He had been president of both the Kansas and Missouri Telephone associations. He was also a member of the Independent Telephone Pioneers and the Armed Forces Communication Association. Until recently he was a member of the Missouri State Mediation Board.

C. L. SPAID

Mr. Spaid was born in Jasper, Mo. Surviving are his widow, Fern, and three daughters, Miss Jean, Miss Shirley and Miss Janet, all of Kansas City, Mo.; a brother, Harold Spaid of New Orleans, and a sister, Mrs. Maud Johnson of Joplin.

General Service Announces Additions to Staff

As a result of increased activity at General Telephone Service Corp. following the merger with Theodore Gary & Co., it has been necessary to supplement the service corporation staff at the New York headquarters, according



Alcoa gives you a new way to increase revenue

Every day more telephone companies are increasing their revenues by installing Alcoa's new outdoor aluminum booths.

These are the booths that need practically no maintenance. The main sections are high-strength extruded aluminum shapes, a process pioneered and perfected by Alcoa. This results in a very sturdy design which has the full approval of Underwriters' Laboratories, Inc., and REA.

The surfaces of Alcoa® Booths are Alumilite* finished—a process developed by Alcoa which produces a very hard, durable surface. The Alumilite finish adds still more to the natural corrosion resistance of aluminum. Alcoa Booths stay bright and inviting with no painting.

The inside surfaces of the booth also have Alcoa's Alumilite finish. Pencil marks and smudges wipe right off. The only care required by Alcoa Booths is an occasional washing with soap and water.

Alcoa Booths are a roomy 33½" square by 86½" high. Louvers provide good ventilation. There's a large handy shelf for packages.

Write for an informative folder giving more information on Alcoa's money-making, maintenance-free booths—another product of Alcoa's Jobbing Division. ALUMINUM COMPANY OF AMERICA, 1690-C Alcoa Bldg., Pittsburgh 19, Pa.

*Trade Name of Aluminum Company of America

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TELEVISION'S FINEST LIVE DRAMA
ALTERNATE SUNDAY EVENINGS

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Your Guide to the Best in Aluminum Value

XUM

to Donald C. Power, president of company.

Charles B. Ames will assist in the Merchandising and Marketing Department. Mr. Ames has worked previously for the Illinois Bell Telephone Co., and his most recent assignment was with the General Telephone Co. of Upstate New York as general commercial engineer.

Paul A. Betty will be concerned with finance and revenue requirements. Mr. Betty was assistant to the treasurer of the Gary Group operating companies prior to joining General Telephone Service Corp.

George E. Brewer has become director of industrial relations in the Operations Department handling personnel matters, labor relations, and salary evaluations. He was formerly director of labor relations for the Gary Group.

Ludwig H. Clifton will assist in the preparation and carrying out of financing programs, including registration statements, etc. Prior to this assignment, Mr. Clifton was the assistant to the financial vice president for the Continental Telephone Co.

Claude Downey will assist in the preparation of financing closing papers and other corporate secretarial matters. He is a former assistant to the financial vice president for the Continental Telephone Co.

William M. Driggs has joined the Operations Department to handle plant and engineering functions. His title temporarily will be director of plant and engineering. It is anticipated that these two functions may later be handled under separate heads. Mr. Driggs previously handled plant and engineering work for Telephone Services, Inc., a service corporation of the Gary Group.

John Evans will become general system tax administrator. He was formerly tax manager of Automatic Electric Co.

W. F. Firstenburg has become insurance and pension director. Formerly Mr. Firstenburg was assistant to the executive vice president of Theodore Gary & Co., on matters relating to insurance and pensions.

H. H. Howlett, former secretary of the principal companies of the Gary Group (and of the Continental Telephone Co.), will become assistant secretary of General Telephone Corp. and of General Telephone Service Corp.

Cyrus H. McLean has become director of foreign telephone operations of General Telephone System. Previously he worked in the same capacity for the Gary Group. G. G. Ferrenc will continue as assistant to Mr. McLean.

John Renwick has become assistant controller of General Telephone Corp. and of General Telephone Service Corp. He was formerly vice president of Telephone Services, Inc.

In Favor of Brevity

"Brevity is a great praise of eloquence."—CICERO.

time means little...

with Republic Creosoted Wood

With the use of Republic Creosoted Wood, the factor of time means little. The continuous performance of Republic Creosoted Wood—whether as poles for telephone or power lines, or as railroad ties, cross arms, anchor logs, wood blocks, piles, or lumber—is evidence of the dependability of these products. Resistant to insects and fungi, in acid or alkaline soils, pressure creosoted wood products by Republic provide the opportunity for an economical investment.

Republic CREOSOTED PRODUCTS

REPUBLIC CREOSOTING COMPANY

MERCHANTS BANK BUILDING · INDIANAPOLIS 4, INDIANA

Answers to Questions On Page 24

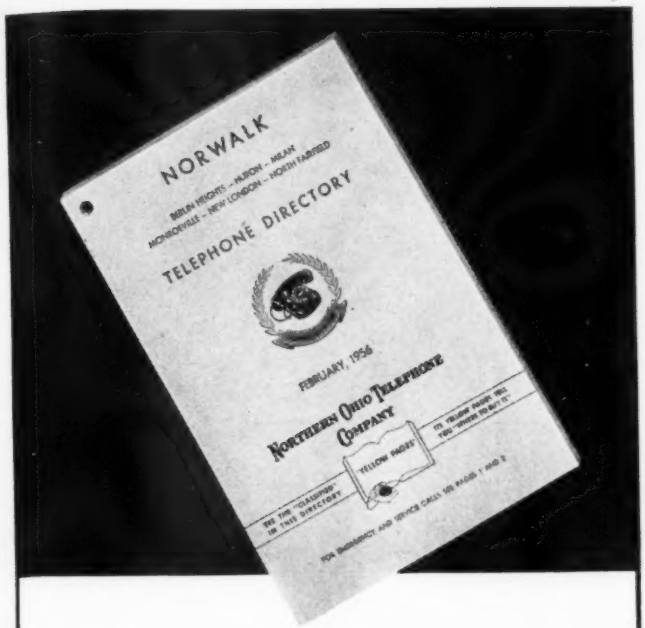
(1) Reach the alternate telephone if one is provided and ask if a signal was received on the Warning Telephone. If a signal was not received, tell the party that you will report the trouble.

(2) Report all trouble encountered to the Plant Department immediately.

(3) Yes.

(4) Enter date of test, time of day, trouble found, time trouble reported, time cleared, nature of trouble, and corrective action.

(5) Say, "At the subscriber's request (called number) has been temporarily disconnected."



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Ruling Principles of Utility Regulation

RATE OF RETURN

by Ellsworth Nichols

–the book you've been waiting for

500 pages
$15.00

Published by Public Utilities Reports, Inc. *and kept up-to-date by periodic pocket supplements.*

One of the most important subjects, if not the ***most important subject***, constantly confronting utility managements, regulatory commissions and others concerned, is the ***amount of return*** to be ***allowed public utility companies*** and ***how best*** to ***determine that return.*** After almost four years of research, study, and analysis, Ellsworth Nichols, Editor of PUBLIC UTILITIES REPORTS and author of other publications on regulation, has completed his new volume ***"RATE OF RETURN."***

Throughout the work, emphasis is placed on the ***ruling principles of courts and commissions*** concerning the ***various factors to be considered, the weight to be accorded such factors,*** and ***illustrations*** of the ***application*** of the ***principles discussed.***

The volume contains 25 chapters, each dealing with an important phase of the subject.

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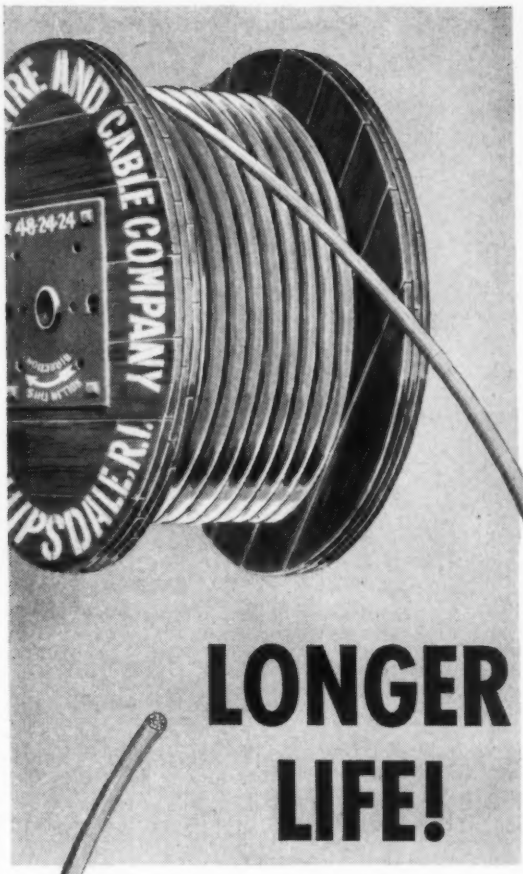

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- **Easy dead-ends**
- **Terminal saves money**
- **More power—less space**
- **Have we got wire**
- **Self-supporting**

Published every week to help you get the most out of your materials and supplies dollar

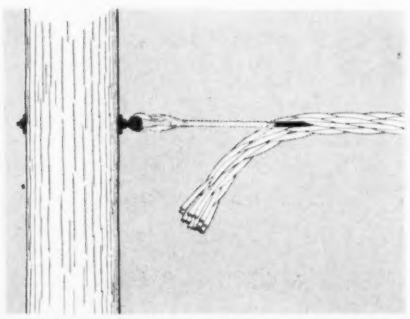
by C. J. Reynolds, Stromberg-Carlson Company

Two dividends are yours when you order supplies from Stromberg-Carlson. First, you get the protection of a double guarantee—ours and the maker's. This assures you of getting the finest products, backed by our 62-year reputation. Second, your support is used to further the art of telephony. We're knee-deep in this industry as a full-time job, not a side line, and your supply business plays a big part and helps us continue our research for new and better telephone equipment.

These dead-ends need no bolts

Your most inexperienced lineman, using the Preformed Dead-End, can make dead-ends faster and easier than an old hand using old-fashioned dead-ends.

No bolts, no special tools are needed. You eliminate costly loops, and your dead-end exceeds the strength of the wire or cable, even under sudden impact. It never relaxes its grip.



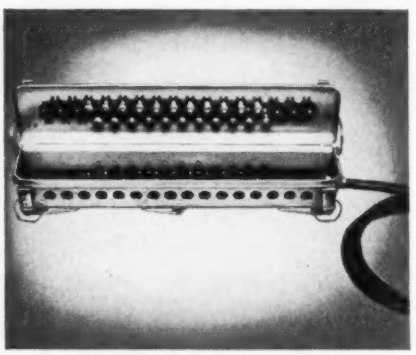
Available in galvanized steel, copperweld, stainless steel and bronze.

The Preformed Dead-End can be applied around an insulator, or inserted through thimble eye.

Available for self-supporting plastic cable, telephone line wires, rural distribution cable, and open wire. Call your Stromberg-Carlson representative.

Designed for economy

That's the way to describe the New "Stranterm" cable terminal, the most flexible terminal ever developed. The Stranterm is primarily strand-mounted, but may be pole-mounted. The stub may be taken out of either end of the terminal and can be either lead or plastic cable. The core section is gas-tight and moistureproof; the terminal may be protected, **even after installation,**



Strand-mounted cable terminal.

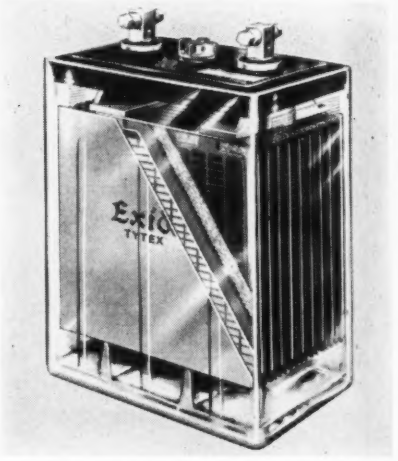
either fully or on a pair-by-pair basis by the addition of Cook's "snap-in" Mini-Gap arresters. The 11 and 16 pair core assemblies are interchangeable and replaceable; and drop wire openings are completely sealed by an exclusive grommeting arrangement.

Taper-less battery saves space

How would you like to pack more power in less floor space?

The essential feature of the Exide Tytex Battery is the manner in which the element is held together in a strong compact unit. This feature has been achieved by assembling its element in a molded glass jar having no taper in its vertical sides . . . thus more power in less space.

Among other features of the battery are the balanced positive and



Exide Tytex Battery has vertical sides.

negative plate design which, together with the use of Mipor separators and Vitrex retainers, contribute to long battery life, less weight per ampere hour output and more attractive looking cells which improve the appearance of the installations.

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Corrosive atmosphere—weather—extra strength—pliability. These are the special problems and needs you run into in wire maintenance. There

are 11 types of Neale spinning or lashing wire, each built to solve one or more of these problems for you.

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.090 Copper
.091 Copperweld
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.061 Galvanized
.091 Special Soft 2.5 Bethanized C-Coating Galvanized
.061 Bethanized 1.5 C-Coating Galvanized

Distribution wire needs no cross arms

There are several reasons you can enjoy lower installing costs with this Whitney Blake multi-pair distribution wire.

Because it's self-supporting, it needs no cross arms. And it's easy to string because it's lightweight and comes in long lengths—up to 4000 feet per reel.

Self-supporting distribution wire has built-in messenger.

This wire has excellent electrical characteristics: low-loss transmission, low capacitance, high dielectric strength.

Its polyethylene insulation provides excellent weather resistance.

The wire is available with 6, 11 or 16 pairs of conductors. Each conductor is protected by a polyvinyl chloride covering.

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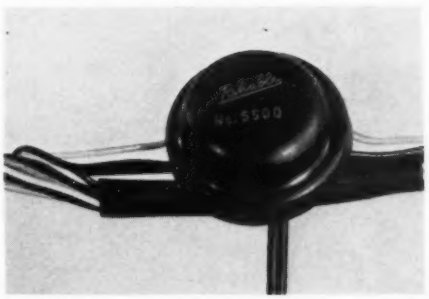
News on New Products

TWO-POST WIRE TERMINALS — Since the introduction to the telephone field of the 3, 5, 6, 11, 16 and 26 pair rural and urban distribution wire, it has been apparent that there is a need for a two-post wire terminal for making single pair junctions between this wire and drop or bridle wire, the Reliable Electric Co. states. In order to be practical, the unit has to be small and compact, mount on the support wire, be reasonably priced and easily installed. The new Reliable two-post wire terminal (Catalog No. 5500) has been designed for this purpose, the company announces.



This terminal comprises a molded plastic body with molded-in binding and mounting posts and a flexible neoprene cover. The slots in the sides of the body provide guides for the conductors of the distribution wire, while the slot in the bottom of the body is for the drop wire or wires to enter. The binding posts are furnished with the following arrangement, starting at the bottom: Two flat beveled washers, one ⅜-inch nut, two flat beveled washers and one ⅜-inch nut.

The stainless steel channel washer on the mounting post on the back of the body is used to clamp over the support wire. The grooves on each side of the mounting post are to guide the support wire into place, and keep the terminal in proper position. The insulation on the support wire may or may not be stripped, depending on the user. It is recommended that a 5-inch piece of split plastic tubing be slipped over the conductors not going through the unit to protect these conductors from damage from the mounting bolt and clamp.

The cap which snaps over the body is made of neoprene similar to that used in covering drop wires, and 20 to 30 years of life can be expected, the company states. After the terminal has been mounted and wired, the neoprene cap is snapped into place, providing a weather-tight covering over the connections between the distribution wire and the drop or bridle wire.

It is recommended that this two-post wire terminal be mounted at a 30-degree angle so that the drop wire is brought vertically downward from the terminal and then looped up and taped to the distribution wire. The drop wire should then be brought over to the pole and continued on from that point. Request NP501.

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Please have the manufacturer send me without obligation the literature indicated by the following numbers:

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It's not surprising that in every field test the Chance 8-Way Expanding Anchor holds more than its rated load because its design just makes common sense. *Eight* blades expand to form a pyramid shaped square —there is no wasted space between blades. The load is distributed *evenly*—all around the hole. It just seems logical that it should hold more, and it does. That's why it's on so many company standards. Your Chance Anchor Distributor can supply you from stock. *Specify Chance for Service!*

EXTRA! EXTRA!
Here's good news for your guys!
Read all about it in "Anchoring."
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CA56-1

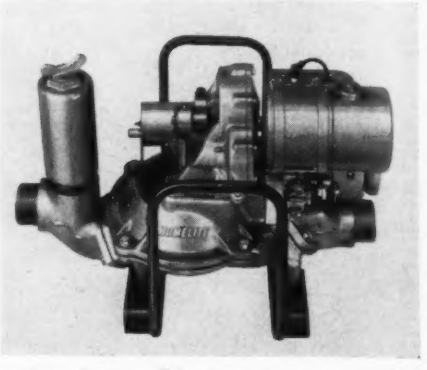
"ANCHORING" is the most complete guide to anchoring and guying ever developed. Shows how to choose the right anchor for every job—and how to install it *right.*

A·B·CHANCE CO.

CENTRALIA, MISSOURI

PUMP — Homelite Corp. has announced a new diaphragm pump with a pumping capacity of 5,000 gallons per hour. The new pump is known as Model 20DP3.

Actual on-the-job testing of the new pump was carried on for 1½ years before final production, according to the company. Model 20DP3 weighs only 120 pounds. Simple, compact design



makes it possible to set up pumping operations quickly—in any location. It will run six hours at full capacity pumping on one gallon of fuel, it is reported.

Powered by a Homelite single-cylinder, two-cycle gasoline engine, the new pump operates at engine speeds between 1500 and 2850 rpm. Throttle on the float-type carburetor, can be hand-regulated to adjust engine speed for different pumping conditions—slow speed for seepage control, full speed for capacity pumping. At full throttle the pump makes approximately 63 strokes per minute.

By using all anti-friction bearings and all heat-treated, cut steel gears in the pump end, wear and maintenance costs on the 20DP3 are held to a minimum. Gears are completely enclosed for full protection. Flapper valves in suction and discharge fittings are self-cleaning to prevent clogging.

Completely self-priming, the 20DP3 will dry-prime up to 15 feet and do it in 15 seconds, it is said. Pumping capacity of the 20DP3 is 5,000 gallons per hour; guaranteed suction lift, 28 feet; and total head, 50 feet, including friction. Supplied with 3-inch fittings, the 20DP3 can be adapted for use with 2-inch hose. Request NP502.

•

CHAIN SAW—Homelite has also announced a new five-horsepower, 19-pound, direct drive chain saw. The saw weighing only 19 pounds, its light weight makes it ideal for limbing or undercutting as well as felling, bucking, notching and boring. Its all-angle diaphragm carburetor allows cutting in any position—up, down, left, right and even upside down.

Available with 12-inch, 17-inch, 21-

inch, 25-inch and 30-inch guide bars, performance tests show that the EZ will cut through 8-inch oak in five seconds and 18-inch pine in 14 seconds. It will bring down trees up to 3 feet in diameter easily.

Included in the features of the new Homelite EZ, claimed by the company, are: Integral cooling fan, aviation type cylinder with chrome plated bore, waterproof and dust proof ignition, aluminum piston, needle bearing on connecting rod, ball bearings on shaft and pinions, and die cast magnesium and aluminum alloys for maximum strength and minimum weight. Request NP503.

•

REMOVABLE TYPEWRITER TYPE—Removable and interchangeable typewriter type—a new development permitting the typist herself to change one or all of the characters on her machine

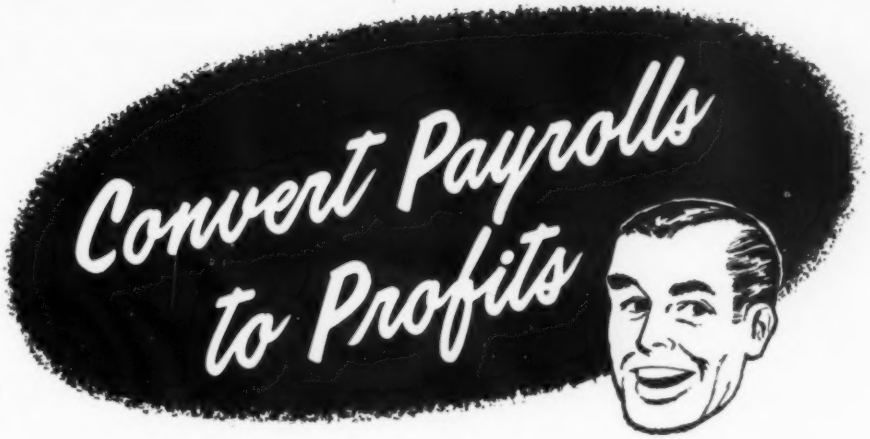
in a matter of minutes is featured on the new 1956 Remington standard typewriter just announced by Remington Rand, a division of Sperry Rand Corp.

Among the other features of the new 1956 Remington standard is an expanded 44-character keyboard which enables the user to take maximum advantage of the new interchangeable type, and provides four extra characters in its standard arrangement: Section and paragraph marks, a plus sign and an equal sign.

Another feature of the new typewriter line is that it has been made available in six colors — five neutral shades—desert sage, lime light, mist green, honey beige and white sand, in addition to the standard French gray. The over-all design of the machine is also new this year.

The exclusive Remington "perfect-positioning scale" has been improved on the new models. It has been made easier to read by means of a wide background strip for the red-and-black printed scale.

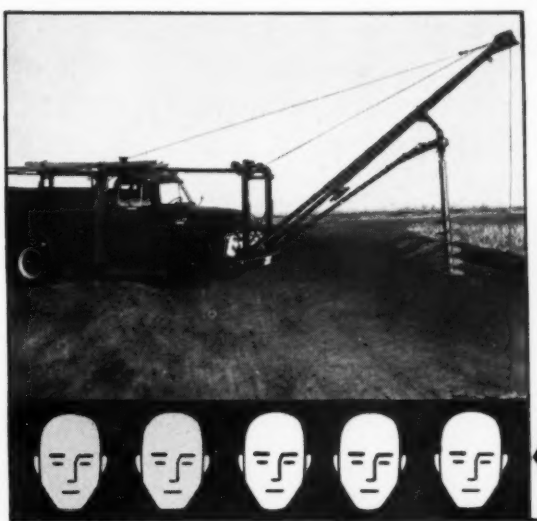
Other popular Remington features, according to the company, are finger-fitted keys, precision-balanced type-bars and a wide variety of colored ribbons for distinctive office correspondence.



Tel-E-Lect's complete line of front operated equipment now enables utility companies to do twice the amount of work with smaller crews in just half the time. If you're still using 5-man crews on obsolete utility equipment (even on a new chassis), you have extra men on the payroll that can be making a profit for you on another job. Tel-E-Lect builds the services of three men into its utility truck equipment. Now, *two men* can do the work once done by five!

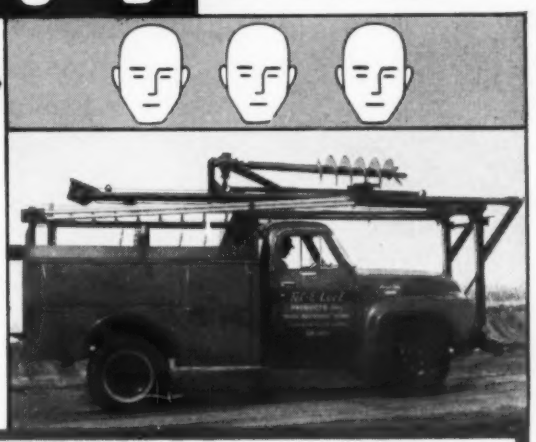
Adaptable to all makes of popular trucks, Tel-E-Lect quality-built front operated equipment is fast and versatile. The simplicity of operation of its winches, digger drive kits, FLD units, derricks, diggers and augers make them efficient and economical—require smaller crews to operate, thus freeing men for other jobs and for big, highline work.

After just *two minutes* on location, the digger and derrick are ready to go to work. Digger and derrick equipment are brought into working position by simply engaging winch line. The digger remains attached to the derrick and is raised or lowered by actuating a single lever in the cab. The load line is now available for pole setting. When digging in hard soil or frozen ground, the weight of the pole may be used as ballast for additional auger pressure.



Tel-E-Lect equipment saves three men out of five for other work.

These men are now available for other important jobs!



Compact, custom-built bodies and utility equipment by Tel-E-Lect are capable of handling the major portion of Telephone and Power Co. work. This unit is shown with derrick and digger stowed overhead for travel.

Write for literature on Front Operated Equipment

TEL-E-LECT PRODUCTS, INC.
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For reliability both in product and in service . . . "Look to Lindsay" . . . specialists in telephone supplies *only*. —Phone or write for immediate delivery or required data.

THE LINDSAY TELEPHONE SUPPLY CO.
10409 Meech Ave., Cleveland 5, Ohio
Tel. Diamond 1-9212

All current and old model Remington standards and electrics can now be re-equipped with special type-bars to receive the new interchangeable type faces.

In making type changes, the typist never has to touch the type with her fingers, or remove work from the machine. Using a pair of tweezers, she removes the old type block, selects a new one, and snaps it into place. The secret of the method is a tiny spring retainer clip on each type block which snaps onto the type-bar;once in place, the character is as firmly fixed and perfectly aligned as ordinary type.

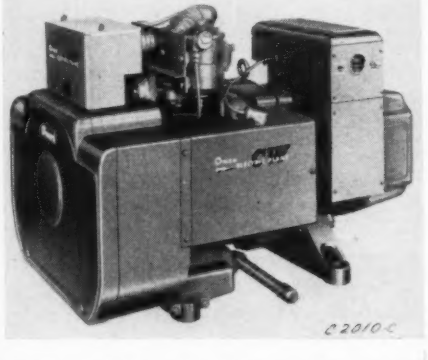
Foreign language characters, symbols, and punctuation marks will also be available to fill the typing needs of foreign legations, import-export concerns, and college foreign language departments.

Company trade-marks and other special-order symbols will also be available in the interchangeable type. Request NP504.

•

ELECTRIC PLANT — A new 7,500-watt ac air-cooled, gasoline-powered electric generating plant is announced by D. W. Onan & Sons Inc. Patterned after the "CW" series which has been available in 5KW and 10KW capacities since 1952, this new Onan electric plant features the exclusive cooling system, Vacu-Flo.

The new vacuum cooling system employs a centrifugal blower that pulls



cooling air through the generator and over the heated engine parts, then expels the heated air through a duct to the outside. This cooling feature enables the new Onan 705CW to be installed in completely enclosed compartments in a space just slightly larger than the unit and its accessories, with allowances for an air-intake vent and exhaust outlet.

Because of their high output per pound weight and compact size, plus their new cooling features, the new Onan 705CW models are highly suited for mobile and portable uses. In the communications field, they save valuable space in vehicles loaded with vital

electronic equipment, the company states. The unit may be used on construction jobs where electric power must be supplied independently to power flood-lights or modern electric tools. Readily trailer-mounted, or available on a skid or dolly, Model 705CW can also be equipped with a heavy-duty, 16-gauge sheet steel weatherproof housing enabling it to stand up and deliver its full-rated power in all types of weather.

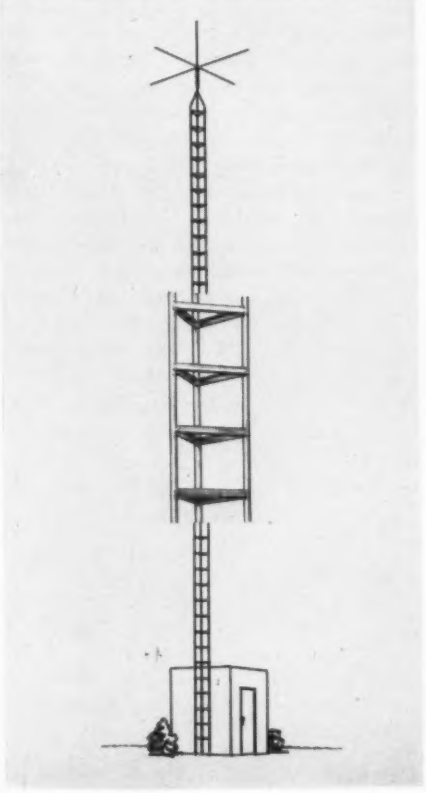
Model 705CW was developed especially to meet the increasing demand for an emergency generating plant between the ranges of five and 10 kilowatts.

Prime mover for the new 705CW is an Onan-built, two-cylinder opposed, four-cycle engine of 20.0 horsepower. It has forged steel crankshaft and rods, extra-large bearing surfaces, full pressure lubrication, copper mesh aircleaner, Stellite-faced valves and seat inserts.

The inherently regulated generator is of the four-pole, self-excited single ball-bearing type, directly connected to the engine to assure permanent alignment. Of drip-proof design, the generator provides a 12-volt battery charging output and is vacuum-cooled by the main engine blower. Frequency regulation for the 705CW is three-cycle maximum; voltage regulation; plus or minus 3 per cent. Available in remote starting only, in all standard voltages, frequencies and phases. Request NP505.

•

MICROWAVE TOWER—Rohn Mfg. Co., has just announced a new addition



ALPHADUCT
TELEPHONE WIRE
here's a drop wire that
lasts longer
costs less
ALPHADUCT DUMBBELL PARALLEL
DROP WIRE WITH NEOPRENE JACKET, No. 18 COPPERWELD CONDUCTORS
Now you can have the longest lasting, neatest drops you've ever strung . . . and at less cost too.
Alphaduct's dumbbell or figure eight construction provides the best protection for the conductors, and is the easiest to install of all the neoprene jacketed drop wires. The No. 18 Copperweld is 20% stronger than No. 17 bronze.
Alphaduct's tough neoprene jacket protects the insulation against sunlight, moisture, oil, acids, abrasion, etc. Each conductor has the same thickness of rubber insulation and neoprene jacketing as it does in twisted pair construction. The dumbbell shape permits splitting the wire without damage to insulation or neoprene jacket on either conductor.
Try this remarkable Alphaduct dumbbell drop wire. It's step-tested during manufacture, dated, so you can tell how long it lasts and carton packaged for your convenience and protection. Order today from the distributors listed below.
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PANKEY SUPPLY COMPANY, CHARLOTTESVILLE, VA.
GENERAL TELEPHONE SYSTEM

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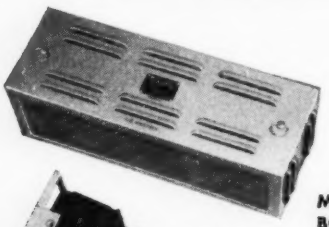
your
Best Bet
for any Kind
of RINGING



MODEL
BC-20S

Check THESE
MONEY-SAVING FEATURES:

- √ NO MOVING PARTS TO WEAR OUT
- √ NO CROSS RINGING DIFFICULTIES
- √ REGULATED RINGING VOLTAGE
- √ BUILT TO HANDLE TOUGH JOBS
- √ ECONOMICAL ON CURRENT
- √ PERMANENT, MAINTENANCE-FREE OPERATION

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With our line of Sub-Cycles, we are in excellent position to meet the requirements of the most exacting engineers in providing ringing machines for the modern telephone plant. Let Lorain furnish you with the proper ringing facilities.

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PARTNERS IN DEPENDABILITY
SUB-CYCLE

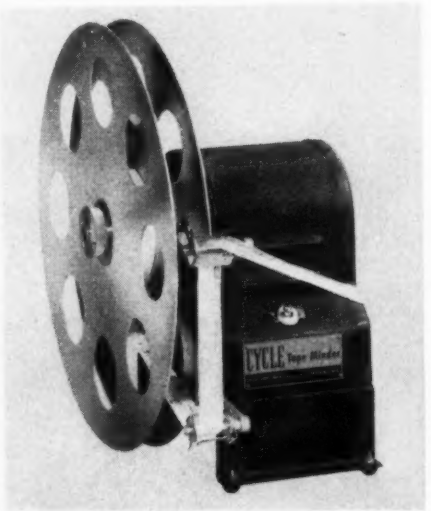
to its line of microwave and communications towers.

A heavy-duty radio communication and micro-wave tower, the Rohn No. 40 is self-supporting to 66 feet; or up to 200 feet to 300 feet when guyed.

Available in hot-dipped galvanized finish, Rohn's biggest tower features an 18-inch equilateral design with steel cross-bracing and is electrically welded throughout. Request NP506.

•

TAPE WINDER—A new universal model Tape-Winder to supplement its standard model is announced by Cycle Equipment Co. for the communications and business machines industry.



The new model will find a wide application for a variety of tape-producing equipment—teletype, ticker, automatic typewriter, accounting, computer.

The Universal Tape-Winder features greater flexibility of use. Three sizes of winding reels are available and are interchangeable on the basic machine, making the machine useful for changing requirements. Reels are quick-threading, instantly removed or replaced and available with either large cores for re-transmitting (unwinding) or small cores for filing.

An exclusive operating arm, coupled to a long-interval on-off switch, provides delayed-action winding, which operates the fan-cooled motor only one-sixth of the total operating time. This same operating arm is built integral to a clutch release mechanism which permits an operator to spin the reels for back reference. A spring-latch is also built into the clutch release which makes it possible to fix the arm in a down position to free both hands for tape inspection.

Other features include: Positive mechanical drive controlled by a clutch-release; reversible tape-retainer guides permitting flexibility in direction of feed; adjustable guide-arm to accommodate difficult positioning, and ball-bearing shaft mountings for long life.

Tape can be fed to the machine from above or below, right or left side, from front or back, underneath or even at right angles to the reel. Request NP507.

•

NON-SLIP TRUCK DIFFERENTIAL—Studebaker Division of Studebaker-Packard Corp., has announced that the Studebaker half-ton truck is available with a non-slip differential as factory-installed equipment.

The non-slip differential is the first major engineering advance in driving control since the two-speed truck axle and in factory-installed differentials in 30 years. It is the first major improvement in truck ease of handling since the introduction of the automatic transmission in 1951, the company states.

Chief advantage is the greater utility of trucks possible because the new differential permits operations when weather and road conditions would not allow efficient operation with a conventional differential.

Studebaker-Twin Traction differential divides the driving power or engine torque between the rear wheels in a way that is directly opposite to conventional differentials. The major engine driving force is transmitted to whichever wheel has the best traction as compared to a conventional differential which lets the power go to the rear wheel with the least traction.

The main purpose of the new Studebaker non-slip differential is to allow trucks to operate when the traction of one wheel is limited, a condition frequently met when the area of trucking operations has ice, snow, gravel, mud, sand, soft ground or other adverse driving conditions. When one wheel is on such a surface, the conventional differential causes it to spin uselessly, since it always lets the driving force go to the wheel which is easiest to turn. With the non-slip differential, slipping and spinning is virtually eliminated, as up to 80 per cent of the power is sent to the wheel which has traction.

The Twin-Traction differential will be offered on all half-ton truck models in the Transtar line as optional original equipment. Request NP508.

•

FISHLINE—A compact, portable, air-operated pneumatic fishline (Model A-2, Catalog No. 588), announced by T. J. Cope, Inc., makes it possible to fish cable through underground conduits of any diameter or length in minutes instead of hours.

A specially-designed flexible steel

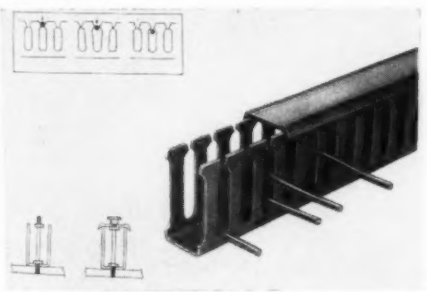
cable is shot through the conduit to the "target" manhole. Once the manhole is reached, the propellant air is turned off and the projectile removed, and for it is substituted simple cleaning tools and the pulling wire or cable.

Then with only a quarter turn on the fishline clutch knob, a powerful air motor is engaged through reduction gears to the fishline reel. A flick of the control valve starts the motor, and the line with its newly attached accessories is quickly retrieved through the duct and re-reeled for its next application.

The neoprene cups offer excellent resistance to wear and to the effects of sunlight, water, oil, etc. Yet they are sufficiently flexible to insure a snug fit with the ducts. They are available in a range of sizes to fit up to 10-inch pipe. Request NP509.

•

PANEL CONDUIT—A new type control panel conduit featuring an exclusive slot design which reduces wiring time, has been developed by Panduit Co. Known as the Panduit plastic wiring duct, it is now available in a wide range of sizes from 1 inch by 1 inch by 5 feet to 3 inches by 3 inches by five feet.



The new slot design introduces a method of inserting and removing wires by snapping them in and out of the duct. It also permits the attachment of lugs before the wire is inserted and allows the wire to be removed with lugs attached.

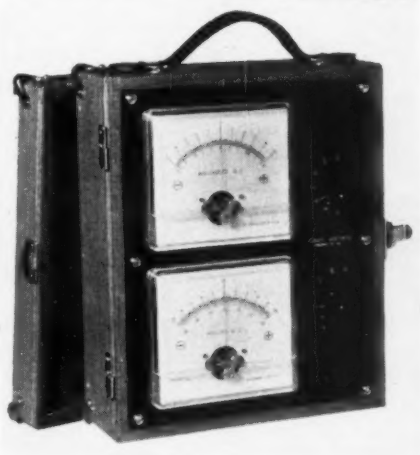
The Panduit fastener also holds both duct and cover and prevents either from slipping. Being an internal nut and bolt arrangement, it has no external projections, does not require space adjacent to the duct and in no way interferes with wire insertion. Threading of wires under fasteners is eliminated.

The Panduit plastic wiring duct is insulated and will not warp due to moisture, heat, etc., the company states. Both duct and cover are finished in black. Request NP510.

•

ELECTROLYSIS VOLTMETER—A new double meter unit which is housed in a hinged cover oak case 4½ inches by nine inches by 10½ inches weighing six pounds, has been introduced by Stewart Brothers, Division of Instrument Laboratories.

The millivoltmeter is a center zero dc millivolt meter having ranges of 2.5, 5, 10, 50, 100 and 500 millivolts at a sensitivity of 2,000 ohms per volt. Range changing is by means of a multi-position rotary switch with "off" position.



The voltmeter is a zero center dc voltmeter with ranges of .3, 1, 3, 10, 30, 100 and 300 volts at a sensitivity of 50,000 ohms per volt. Range changing is by means of a multi-position rotary switch with "off" position.

Accuracy of both meters is ± 1 per cent of full scale.

Both meters are provided with plainly polarity marked binding posts. Meter cases are clear plastic, providing better illumination of the scale and quicker and more accurate readings.

The meter and switch arrangement on the bakelite panel is such as to provide a standardized polarity arrangement, the same for both meters. The position of the rotary switches and binding posts, easily read switch mark-

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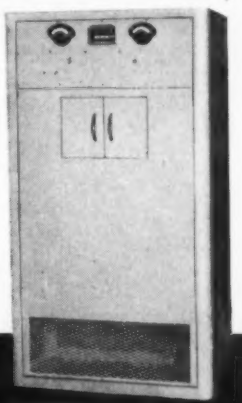
the most *Dependable* name in AUTOMATIC BATTERY CHARGERS



MODEL 2500-B

Check THESE MONEY-SAVING FEATURES:

- √ MAINTAINS CONSTANT VOLTAGE
- √ SAVES ON MAINTENANCE — NO MOVING PARTS TO WEAR OUT
- √ SAVES POWER
- √ SAVES BATTERIES
- √ EASY INSTALLATION
- √ LONG-TIME, RELIABLE, ECONOMICAL OPERATION

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If you're planning to replace or add to your charging facilities, don't overlook the many advantages of a FLOTROL. There are FLOTROL Battery Chargers and Battery Eliminators to meet every power requirement. If you have any power problems, our engineering staff is always ready to assist you.

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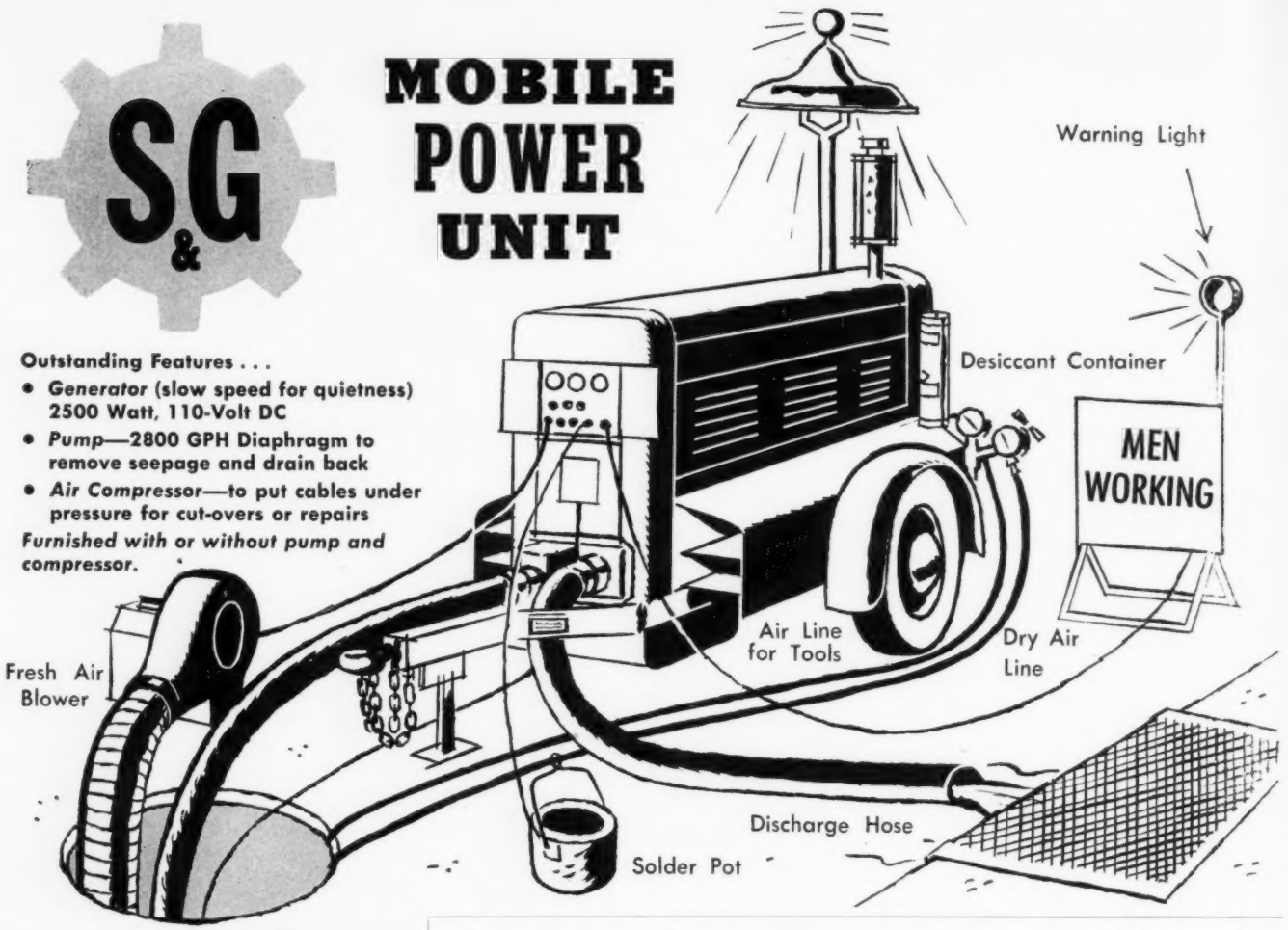

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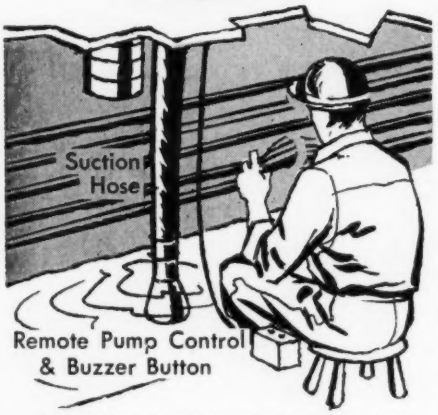
- ***Generator*** **(slow speed for quietness) 2500 Watt, 110-Volt DC**
- ***Pump*****—2800 GPH Diaphragm to remove seepage and drain back**
- ***Air Compressor*****—to put cables under pressure for cut-overs or repairs**

Furnished with or without pump and compressor.



- 300-Watt floodlight illuminates working area
- operates soldering pot and iron, electric and air tools
- electric blower to ventilate manhole
- supplies dry air for cable cut-overs, flash testing, etc.
- diaphragm pump can be operated from manhole by push button control
- buzzer signal for summoning helper
- light, easy to handle

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ings and switch knobs which can be readily turned even with gloved hands, make it convenient to use and reduce errors.

The meter movements used in the meters are specially designed for this unit and the characteristics of the moving system are such as to assure ruggedness and sustained accuracy with use and treatment to which an instrument of this nature is subjected.

The two meter complement of this unit enable simultaneous readings to be taken of fluctuating voltages and currents.

The zero center type of meter avoids polarity confusion and also aids in simultaneous and quick readings in locations of fluctuating polarity, voltages and currents.

Where the source of voltage is of high resistance, it is possible by means of a rather simple calculation to arrive at the open circuit voltage, knowing current sensitivities of each meter.

The millivoltmeter with its 2.5 millivolt range provides an extremely low range reading without the use of a potentiometer or a vacuum tube voltmeter. The high current sensitivity of the voltmeter introduces a very small load on the source of voltage being measured and, therefore, in the majority of cases its reading will deviate little or none from the true open circuit voltage. Request NP511.

N. Y. Company Expands Microwave Consulting Aid

MSI Communications Consulting Engineers, Microwave Services, Inc., announces the addition of a new department to its consulting services. The firm is now also providing engineering and consulting services in the field of microwave components development and design.

An experienced staff is available to handle problems concerning all phases of microwave plumbing, stripline, ferrite devices and antennas. Laboratory facilities are also available.

For further information write to MSI Communications, Inc., Times Tower Building, Times Square, New York 36, N. Y.

View on Free Enterprise

"Ours is an open economy because it gives every man a choice of a thousand roads toward the kind of life he wants for himself and his family. It is an open economy because it is built on a belief in constructive change—and upon all the freedoms that make change possible. It is an open economy because it is always headed toward an open and unscheduled future."—LESTER L. COLBERT, *president, Chrysler Corp.*

Copperweld Names M. Brown Territory Sales Engineer

F. E. Leib, manager of sales, Wire & Cable Division of Copperweld Steel Co., announces the appointment of Maskell E. Brown as sales engineer in Eastern Pennsylvania, New Jersey and the New

M. E. BROWN

York City area. His headquarters will be at 117 Liberty Street, New York City. He succeeds Henry Oberle who is inactive because of illness.

Mr. Brown was a lieutenant colonel with the U. S. Signal Corps Plant Engineering Agency, where he served as chief of the Wire Branch and chief of the Communications Engineering Division. This is the agency responsible for permanent communications for the Army all over the world.

Prior to that, he was chief of the Communication Engineering Branch, Signal Division, Hq. EUCOM, Heidelberg, Germany; and he has served as director of the Wire Division of the Signal School, Fort Monmouth, N. J. His foreign service with the Signal Corps also included assignments in Panama, Australia, New Guinea, Philippines, France, and Austria.

Graybar Names W. J. Berry Manager, SE District

Willard E. Henges, president of the Graybar Electric Co., has announced the appointment of Wayne J. Berry to district manager of the southeastern district of the Graybar Electric Co. Mr. Berry's headquarters will be located in Richmond at 10 S. Sixth St.

Mr. Berry first became associated with the Graybar Electric Co. in 1937, when he started in the utility department in St. Louis. He later progressed to assistant to manager—utility department in the same location. In 1939, Mr. Berry transferred to Memphis in

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35-ft. HYDRAULIC AERIAL LADDER
Elevate it — extend it — rotate it — retract it . . . hydraulically, by moving three levers. The new, improved Series HL-35 all-hydraulic Aerial Ladder is that easy to operate. It's completely safe, too . . . supports five times normal load at 45° angle. Extends 35′ . . . enables workman to reach areas higher than 40′ above ground.
If your overhead work doesn't warrant the use of a fully-hydraulic ladder, the Series HL-35 can be furnished with manual extension and/or rotation. Also available in 26′6″ and 30′6″ heights.
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the capacity of salesman and again in 1946 he returned to the St. Louis house as manager, power apparatus. In 1949, he became manager, outside construction sales. In July, 1952, Mr. Berry was appointed manager at Graybar-Memphis, the position he held until his recent appointment.

The Graybar-Richmond location covers the states of Virginia and North Carolina with houses located in Charlotte, Asheville, Durham, Norfolk, Winston-Salem and Rocky Mount.

C. S. Powell, Mississippi Valley district manager of the Graybar company, has announced that effective immediately J. H. Pearson III has been appointed manager at the Graybar-Memphis location, replacing W. J. Berry.

Mr. Pearson first became associated with the company in 1946 when he was employed on a temporary basis in the capacity of warehouseman. In 1948, he was employed in the St. Louis house as assistant to inside construction manager, and later that same year became assistant to managers of outside construction and apparatus departments. In 1949, Mr. Pearson was appointed manager, power apparatus department and the next year, while still in the St. Louis house, became salesman—country territory. In 1952, he became manager, outside construction and apparatus sales and then in 1954, manager, inside construction sales.

Graybar's Memphis address is 1474 Lamar Ave., Memphis 4, Tenn. From it, the company covers 14 counties in the northeastern section of Arkansas, 21 counties in the western half of Tennessee and the 37 counties in the northern half of Mississippi.

CCIF Issues List of Books On Telephone Field

Announcement was made on Feb. 23 of publication of a series of books by the International Telephone Consultative Committee (CCIF) on various phases of telephony.

The collection of the books (destined to replace the former books of the CCIF) constitutes a re-editing of all the CCIF recommendations and represents the material results of the work of the International Telephone Consultative Committee from 1951 to 1955.

This work is published in French and English (a Spanish edition is available in mimeographed form). The work may be obtained from the Publications Department of the International Telecommunications Union (ITU), Palais Wilson, Geneva, Switzerland. (Request price list.) The contents of the various volumes of the book collection and the conditions applying to their sale are as follows:

Volume I (574 pages) Minutes of meetings of the 17th Plenary Assembly of the CCIF (Geneva, October 1954)—Organization of the CCIF—Questions for study.

Volume II (120 pages) Recommendations of the CCIF concerning the protection of telephone lines or the constitution of telephone cable sheaths, as well as documents on protection.

Volume III (about 350 pages) and Book of Annexes of Volume III (a separate volume of some 250 pages) Recommendations of the CCIF concerning line transmission and maintenance. (Particularly specifications for international telephone circuits and international carrier systems.) Being printed.

Volume IV (about 200 pages) and Book of Annexes of Volume IV (a separate volume of some 200 pages) General recommendations and measurements of performance rating. Telephone apparatus. Being printed.

Volume V (124 pages) Signalling and switching—specifications for standard international signalling and switching equipment.

Volume VI (164 pages) Recommendations on operating and tariffs and documents pertaining thereto.

View of Franklin's Record

"Benjamin Franklin's was the only name signed to all four basic documents of our beginnings: The Declaration of Independence, the Treaty of Alliance with France, the Treaty of Peace with England, and the Constitution. Many of the principles he promulgated have a particular significance for us today. He stood for local as against federal action; he urged that federal taxes be kept down through thrift and economy. With all his full time activities in science and industry he still found time, when asked to engage in public service for the good of all his country. He was truly a great American."—North Kansas City (Mo.) *Press-Dispatch.*

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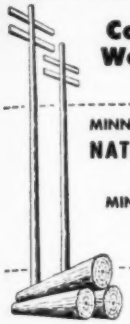

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1:1 imp. ratio, 4 section, 2—ohms each, passes 20 to 1000 cycle ringing current (resonates at 20 cycle when used with 4 mf. condenser to increase ring power). Rectangular size 4"x4"x2", 4 mtg. studs on end.
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2 coils, 1 4 mf. condenser on 19" rack mtg. strip 7.50

2 coils in W.E. pole box (heavy galv. sheet steel) with 84A, 5 pr. protector (26 & 27 or 26 & 30 blocks) and two 4 mf condensers, wiring diagram $16.50

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1¾" x 3¾" x 5¼" (2¾" mounting stud centers) Brand New $3.00
lots of 10, per coil 2.75
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Mounting strip (10 coil) for 19" rack $2.50

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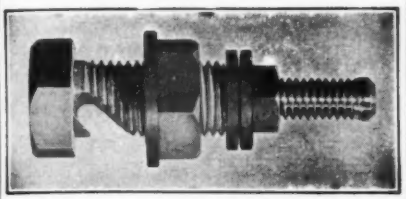

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